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ImageR User's Guide

Version 4.30

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1.0 INSTALLING ImageR

1.1 Software Requirements

ImageR requires Microsoft Windows version 3.1 or higher.

1.2 Hardware Requirements

Minimum hardware for running ImageR is an IBM-PC compatible computer with a 386 processor and at least 4Mb of memory.

1.3 Installation

Note: Microsoft Windows must be running before ImageR can be installed.

Insert the ImageR setup floppy into the floppy disk drive, then:

1) From the Windows File Manager, select the floppy drive.

2) Double-click on the **setup.exe** icon

----- OR -----

1) From the Windows Program Manager **File** menu, select **Run**.

2) When the dialog box appears, type the **drive name** and **setup.exe**. For example, if the A drive is used, type

a:\setup.exe

Answer the questions and follow the instructions that appear on the screen.

2.0 ImageR OVERVIEW

ImageR 4.25 is a 32-bit OLE Server application that is capable of viewing and manipulating various types of raster and vector files. ImageR provides a Multi-Document Interface (MDI) for displaying images. This means many files of different types can be opened and displayed simultaneously and manipulated individually. ImageR is also compliant across multiple operating systems such as Windows 3.1, Windows NT, and Windows '95', with many Windows '95' compliance issues already resolved. ImageR also provides an extensive 'Redlining' package to aid users in marking images. Commands such as Zoom In, Window Area, etc. are provided for zeroing in on all parts of an image.

Below is an example view of the ImageR application.

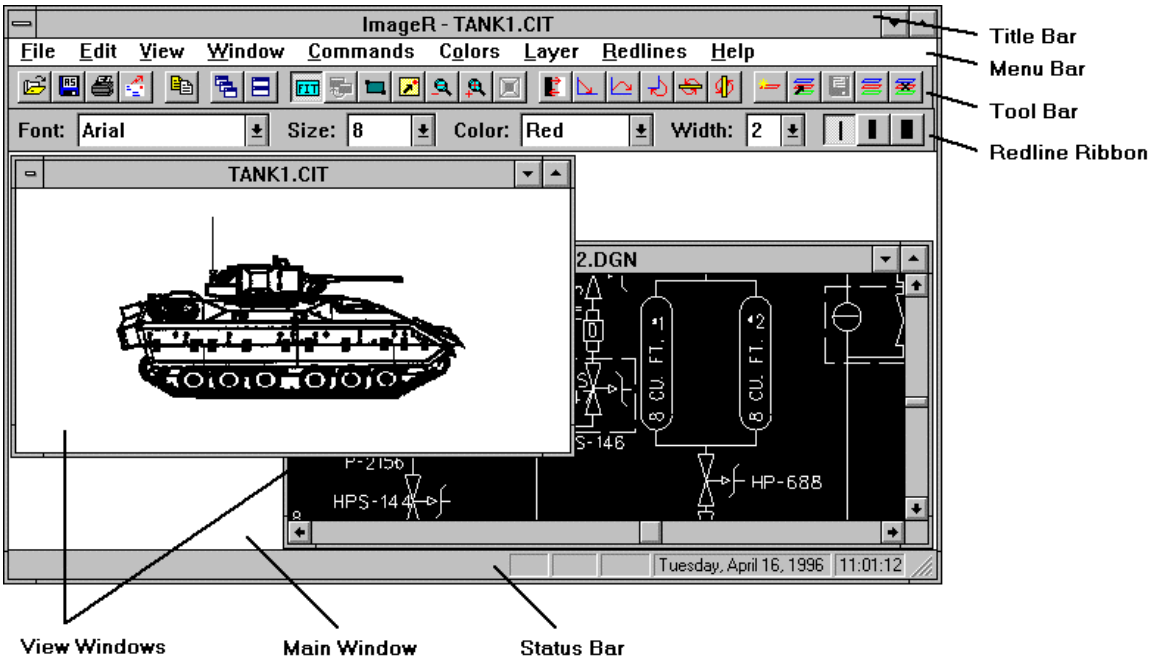


Figure 2-1 Example ImageR Application Window

2.1 Using the Mouse

The mouse is used to move the mouse pointer and to initiate actions. It also may be used to indicate points on the screen at which an action is to take place. In this guide "select" means to quickly press and release or "click" the left mouse button while the mouse pointer is over a specified point or item on the screen.

Some actions require a "double-click" - two clicks in rapid succession - on the left mouse button.

By clicking on the right mouse button, some ImageR actions can be canceled.

To "drag" an object with the mouse, put the mouse pointer over a specified point or item then hold down the left mouse button and move the mouse so the object is pulled to a new location on the screen.

2.2 Using the Keyboard

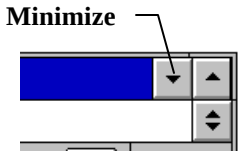
The keyboard is used in ImageR as it is normally used in Windows applications. In this guide, keystroke shortcuts will be given along with descriptions of some ImageR commands. In these descriptions a plus sign means hold down the first key then type the remaining key. For example CTRL+F means hold down the **Control** (Ctrl) key then type an **F**; ALT+V means hold down the **Alternate** (Alt) key then type a **V**.

2.3 Manipulating Windows

Select a window (make it active) by clicking the left mouse button while the mouse pointer is inside the window's border.

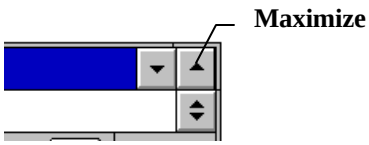
To move a window, drag the title bar of the window to a new location.

To reduce a window to an icon, click the **minimize** button in the upper right corner of the window:



To restore an icon to a window, double-click the icon.

To enlarge a window, click the **maximize** button in the upper right corner of the window:



For other ways to manipulate windows, see the Windows Tutorial which can be started from the Program Manager Help menu.

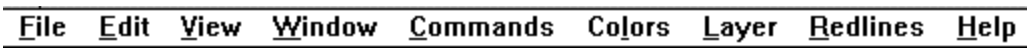
2.3.1 The Main Window

The ImageR main window is the large area between the tool bar at the top and the message bar at the bottom of the screen. No text or data is displayed on the main window and it contains no scroll bars. The main window serves as a container window for all image views as they are opened. If any image views are iconified, the icons are arranged at the bottom of

the main window. The main window can be stretched or shrunk as necessary to accommodate image views.

The ImageR overview in section 2.0 also shows the location of the main window

2.3.2 The Menu Bar



The ImageR menu bar is the single line bar at the top of the application window between the title bar and the tool bar. On the menu bar are the names of popup menus, each containing a list of command names. Names on the menu bar and popup menus will vary depending on what type of raster file is displayed in the active image view.

To activate a popup menu, select a menu name with the mouse or press the ALT key plus the first letter of the menu name. To execute a command from the popup menu, select the command with the mouse or use the up and down arrow keys to highlight an option then press **Enter**. The popup menu will disappear from the screen and the command will be executed.

The ImageR overview in section 2.0 also shows the location of the menu bar.

2.3.3 The Tool Bar

The ImageR tool bar is the single line bar at the top of the application window between the title bar and the main window; it contains buttons representing a subset of the commands available from the menu bar. A tool bar command is executed by selecting the appropriate button with the mouse.

The buttons on the toolbar will also indicate the state of a raster image. If the raster image is inverted, then the Invert button will be depressed. If the image is rotated 90 degrees and flipped horizontally, then the Rotate 90 and Flip Horizontal buttons will be depressed.

The ImageR overview in section 2.0 displays a picture of the windows associated with the ImageR application.

2.3.4 The Redline Ribbon

The ImageR Redline Ribbon is the single line bar above the application window between the tool bar and the main window. The Redline Ribbon contains a subset of the commands available on the menu bar displayed as graphic buttons.

The Redline Ribbon also contains settings that cannot be found on the menu bar. These settings include Font, Size, Color, and Width. The Font and Size settings are only used for text redlines. The Color setting applies to all redlines. The default Color setting is red, but redlines may be placed in one of sixteen different colors. The Width setting controls the line thickness. There are three preset line thicknesses, thin(2), medium(5), and heavy(8), but the user can set the thickness anywhere from 1 to 10. These settings should be adjusted before a redlines are placed.

The ImageR Overview in section 2.0 displays a picture of the windows associated with the ImageR application.

2.4 Supported File Types

ImageR supports a variety of raster file types. These include:

Intergraph Run Length Encoded (rle)
Intergraph CCITT Group 4 (cit)
Intergraph Tiled Group 4 (tg4)
EDMICS (c4)
CALS Type I (cal)
AT&T Wrapped Group 4 (ef)
NIRS/NIFF (nif)
Device Independent Bitmap (dib)
Windows Bitmap (bmp)

Vector File types supported:

2-D and 3-D Microstation (dgn)
AutoCad (dxf)
AutoCad (dwg)

ImageR will also display text (ASCII) files. Text is used to display header information for raster files when the header data is stored in a separate ASCII file.

3-D Microstation files will be displayed; however, the z value of the points is not utilized. The files are read in and converted to 2-D images. No rotation or zoom will be available on the z value.

2.5 Integrating ImageR with Other Applications

ImageR was developed with full DDE and OLE2 Server support; it can be integrated with other applications using DDE or OLE2 communication. ImageRs' DDE capabilities can be utilized by other applications by passing various commands from the application to ImageR. OLE capabilities can be utilized in the following ways:

1 - Copy to clipboard - ImageR server objects or images can be embedded into OLE container applications(MS Word, MS Excel, etc.) simply by copying them to the clipboard and then pasting them into the container application using the containers' 'paste' option. To activate the embedded object simply double-click on the object in the container application and ImageR will take over the applications menu and toolbar inside of the container. Using the 'paste special' option in the container application allows for embedding the object as an icon or pasting the image as a linked object. Linked objects will invoke ImageR to be displayed as a stand-alone application with the object active in ImageR. Icons can be embedded or linked and will respond accordingly.

2- Drag and Drop - A quicker way to embed objects into container applications is through drap/drop. To accomplish this hold the Ctrl key or the Ctrl + Shift key down and hold the left mouse button down over the selected image; then drag the mouse over to the OLE container application and drop the object.

3- Insert Object - All OLE container applications have the 'Insert Object' capability built in. On the containers menu bar select 'Insert' and then select 'Object' under the 'Insert' choices. This will bring up the 'Insert Object' dialog box. You will have two choices:

A - Create New - Do not use this option. ImageR is a viewer and cannot edit or create files from scratch.

B - Create from File - Use this selection to embed or link ImageR objects into your container application.

2.6 Parameters in the registration database under "ImageR Windows Application".

During ImageR initialization a file named "IMAGER.INI" is placed in the Windows directory. This initialization file contains numerous parameters used as default values during ImageR processing. These parameters are updated in the registration database and are no longer utilized from "IMAGER.INI".

Below is a description of the initialization parameters and default values. The registration database is automatically updated upon exit from ImageR to modify any values the user may have changed during the execution. For example window locations and tool displays. This file can be edited manually to change the values, but care should be taken when changing values.

[Product Data]

RedlineFilePath=C:\Redlines The directory path that will be searched for redline files. If a file has any associated redline layers, ImageR will search this directory and load the redlines as necessary. If this entry is not present in the registration database, ImageR uses this value as the default.

Video=mplayer.exe The executable that will be used to play any video files referenced by a drawing through a redline. If this entry is not present in the registration database file, ImageR uses this value as the default.

Audio=soundrec.exe The executable that will be used to play any audio files referenced by a drawing through a redline. If this entry is not present in the registration database, ImageR uses this value as the default.

[Recent File List]

File1=c:\data\test1.dgn The first file displayed in the command. This variable contains the name of the last file closed inside ImageR. The next time ImageR is started, the user will have quick access to this file.

File2= c:\data\test2.dgn The other three files displayed in the File 1,2,3,4 command.

File3= c:\data\test3.dgn These variables contain the names of the three files closed

File4= c:\data\test4.dgn before the file specified by **File1**. The user will also have quick access to these files.

[Locations]

PATH=C:\IMAGER The directory in which ImageR was installed. This should not be modified.

REFDIR=c:\reffiles The directory path that will be first searched for reference files. If this variable does not exist or the reference file does not exist in this directory, the directory that the active drawing resides in will be searched followed by the ImageR home directory.

LASTDIR=C:\DATA The directory path from which the last File Open command opened a file.

FILETYPE=0 An integer value indicating the last file type selected on the File Open dialog. This should not be modified.

FONTFILE=c:\imager\fontlib The directory path and file name for the Microstation font library file. If this entry is not present in the registration database, ImageR uses ImageR home directory as the default.

[Position]

X=0	The X coordinate in the display for the upper left corner of the main ImageR window. If this entry is not present in the registration database, ImageR uses 0 as the default.
Y=0	The Y coordinate in the display for the upper left corner of the main ImageR window. If this entry is not present in the registration database, ImageR uses 0 as the default.
WIDTH=600	The width of the main ImageR window. If this entry is not present in the registration database, ImageR calculates the width based on the screen size.
HEIGHT=500	The height of the main ImageR window. If this entry is not present in the registration database, ImageR calculates the height based on the screen size.
REDTOOL_X=581	The X coordinate in the display for the upper left corner of the Toolbox. If this entry is not present in the registration database file, ImageR calculates the location based on the screen size.
REDTOOL_Y=318	The Y coordinate in the display for the upper left corner of the Toolbox. If this entry is not present in the registration database file, ImageR calculates the location based on the screen size.

MAXIMIZED=0 Specifies whether ImageR is initially displayed maximized (1) or minimized (0). If this entry is not present in the registration database, ImageR uses 0 as the default.

MAXDOCS=0 Specifies whether files displayed by ImageR are initially displayed maximized (1) or minimized (0). If this entry is not present in the registration database, ImageR uses 0 as the default.

TOOLBOX_X=463 The X coordinate in the display for the upper left corner of the user defined toolbox. If this entry is not present in the registration database, ImageR calculates the location based on the screen size.

TOOLBOX_Y=307 The Y coordinate in the display for the upper left corner of the user defined toolbox. If this entry is not present in the registration database, ImageR calculates the location based on the screen size.

RedlineFont=Arial Specifies the font that was last used during a redline operation. ImageR user Arial as the default.

RedlineSize=15 Specifies the size of the selected font. ImageR users fifteen(15) as the default.

RedlineColor=1 Specifies the color of the current redline layer. ImageR uses Red(1) as the default.

RedlineWidth=2 Specifies the width of the current redline line width. ImageR uses two(2) as the default.

[Associations]

VERSION=ImageR - 4.25 Specifies the version of the ImageR installed. If a later version of ImageR is installed on top of an old version of ImageR, cleanup is performed during installation. Old file associations are removed before the new file associations are added.

[Settings]

PrintMonochrome=1 Specifies that all print requests will be done in monochrome unless this option is turned off.

[Command Line]

FileName=none Allows ImageR to respond to command line requests attempting to invoke another instance of application. Does so by parsing command line and passing file to be opened to initial instance of ImageR.

[Export/Import]

ExportDirectory=c: Containes last chosen export directory.

ExportFileDirectory=c: Containes last chosen export file directory.

ImportDirectory=c: Containes last chosen import directory.

ImportFileDirectory=c: Containes last chosen import file directory.

3.0 STARTING ImageR

ImageR can be started in several different ways. The first way is from the Windows interface utilizing icons. Move the mouse pointer to the ImageR icon created during the setup

procedure and double-click the left mouse button. When ImageR is started this way, it will be displayed with no files open. Use the **Open** file command (Section 4.1.1) to open drawings.

The second way to start ImageR is also through Windows, but using the File Manager. Bring up the File Manager by double clicking on the File Manager icon in the Main program group. Locate the ImageR executable, "IMAGER.EXE", in the directory where it was installed during the setup procedure. Then double click on the "IMAGER.EXE" filename. This will also start ImageR with no files open.

The third way to start ImageR will allow the automatic opening of drawings. Open a DOS window by double clicking on the Command Prompt icon in the Main program group. In the DOS window, change directories to the directory where ImageR was installed during the setup procedure. From the DOS prompt, type "IMAGER.EXE" followed by one or more filenames of the drawings to be opened. For example, the following line would start ImageR and automatically display one Microstation drawing and one raster drawing.

```
C:\IMAGER\IMAGER.EXE c:\data\test1.dgn c:\data\test2.rle
```

4.0 USING ImageR

4.1 File Menu

4.1.1 Open

Open command (File menu)

Use this command to open an existing document in a new window. You can open multiple documents at once. Use the Window menu to switch among the multiple open documents. See instructions for the Window 1, 2, ... command in section 4.4.5 of this document.

Shortcuts

Toolbar: 
Keys: CTRL+O

4.1.2 Close

Close command (File menu)

Use this command to close all windows containing the active document.

You can also close a document by selecting the **Close** box on the document's window, as shown below:

Shortcuts

Mouse: Double-click the application's Control-menu box.

Keys: CTRL+F5

4.1.3 Close All

Close All command (File menu)

Use this command to close all open documents.

You can also close a document by selecting the **Close** box on the document's window, as shown below:

Shortcuts

Mouse: Double-click the application's Control-menu box.

Keys: CTRL+F5

4.1.4 Save As

Save As command (File menu)

Use this command to save and name the active document. ImageR displays the Save As dialog box so you can name your document.

Shortcuts

Toolbar: 

Save As dialog box

File Name

Type a new filename to save a document under a different name. A filename can have up to eight characters with an extension of up to three characters. ImageR adds the extension you specify in the **Save File As** Type box.

Drives

Choose the drive on which you want to store the document.

Directories

Choose the directory in which you want to store the document.

Network...

Choose this button to connect to a network location, assigning it a new drive letter.

4.1.5 File Info

File Info command (File menu)

Use this command to display information specific to the active file. The File Information dialog will be displayed listing the file name, type, size, last modification date. If the file is a raster file, the File Information dialog will also display the scanlines/pixels, number of scanlines, dots per inch, and orientation. Below is a picture of a Raster File Information dialog.

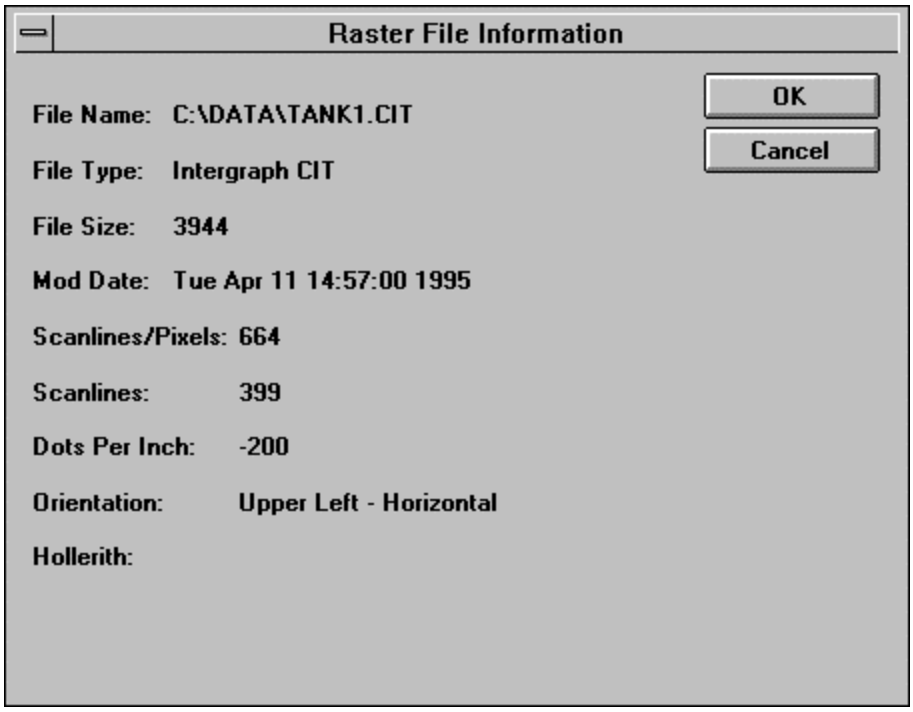


Figure 4-1 Raster File Information Dialog

Shortcuts

Keys: CTRL+I

4.1.6 Print

Print command (File menu)

Use this command to print a document. A Print dialog box appears so you can specify the range of pages to be printed, the number of copies, the destination printer, and other printer setup options.

Shortcuts

Toolbar: 
Keys: CTRL+P

4.1.7 Print Preview

Print Preview command (File menu)

This command displays the active document as it would appear when printed. When executed, this command causes the main window to be replaced with a print preview window in which one or two pages of the active document appear. The print preview toolbar has options for viewing one or two pages at a time, moving through the document, zooming, and initiating print jobs.

Shortcuts

Keys: CTRL+R

4.1.8 Print Setup

Print Setup command (File menu)

Use this command to set up a printer and a printer connection. A **Print Setup** dialog box appears to show what set up and connection options are available.

Print Setup dialog box

Printer

Select the **Default Printer**, or use the **Specific Printer** option to choose one of the currently installed printers shown in the box. If necessary, other printers can be installed and printer ports can be configured with the Windows Control Panel.

Orientation

Choose **Portrait** or **Landscape**.

Paper Size

Select a paper size for printing.

Paper Source

Some printers offer multiple trays for different paper sources. Specify the tray here.

Options

Displays a dialog box with additional choices for printing, specific to the type of printer selected.

Network...

Choose this button to connect to a network location, assigning it a new drive letter.

4.1.9 Print Monochrome

Print Monochrome command (File menu)

Use this command to print the images in monochrome(default).

4.1.10 Send

Send command (File menu)

Use this command to send an e-mail containing the current image.

4.1.11 Export File

Export File command (File menu)

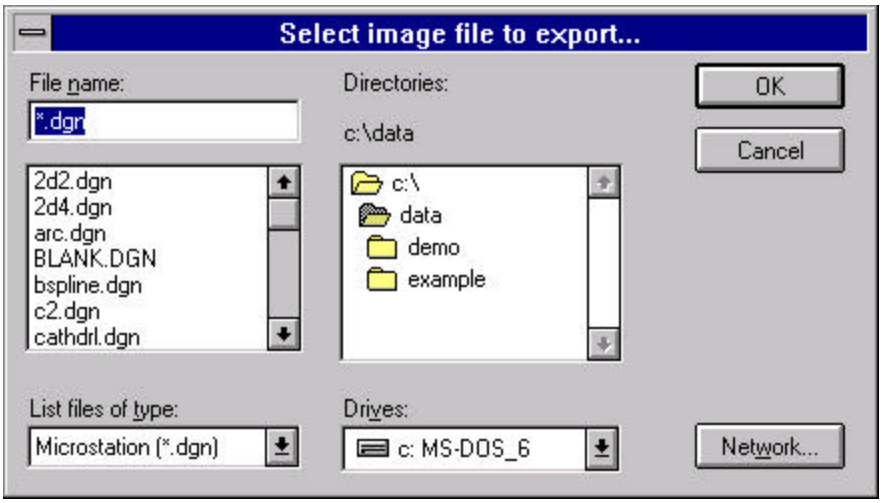
This command is used to take an image file and all associated redline layer files and zip them up to be imported to another system. Below are the required steps to accomplish this procedure:

** Important Note **

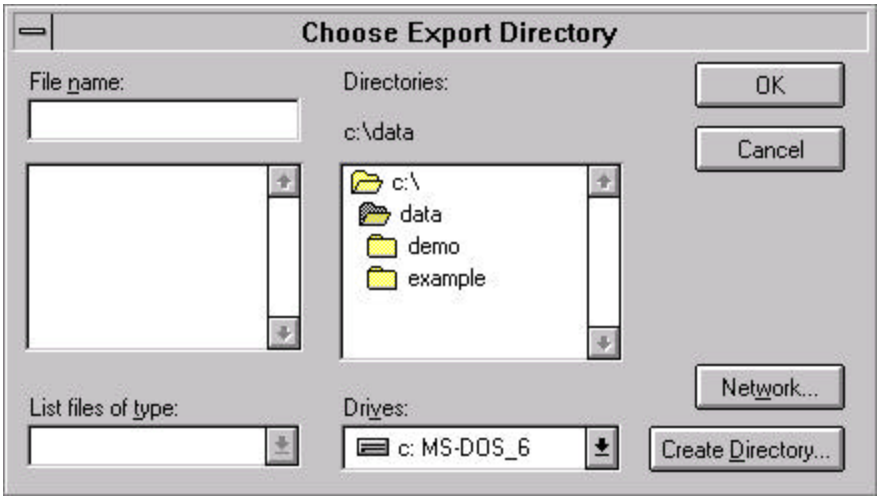
When you select the image file that you want to export, make sure your redline directory is set where the redline layer files reside for the selected image. Unexpected results will occur if the redline directory is not set to the proper place. The "Set Directory..." option is located under the "Layer" menu.

Required Steps:

Select the "Export File..." option under the "File" Menu. The following dialog box will appear:



Navigate and select the image file you want to export. Once you have selected the file the following dialog box will appear:



Navigate to the desired ouput directory and select ok. This directory will be where the image file and all redline layer files are copied and zipped up to be exported. If you want to create a new ouput directory then simply navigate to where you want the new directory to be placed and select the "Create Directory..." button.

As the export process begins a dialog box will appear with a suggested name for the zipped file. This can be changed by the user if desired. For example, if you select "maverick.cit" as the image file to be exported, then the default name for the zipped file will be "maverick.zip".

** Important Note **

As the redline layer files are processed, they may contain either audio, video or file links. The export option will find these files and zip them up also to be exported. The export option will also rewrite the layer files to set the paths for these links to be relative and not absoulute, so the links will be available when the zipped file is imported. For example, if an audio link resides and has the path c:\windows\chimes.wav, the export option will change this to chimes.wav.

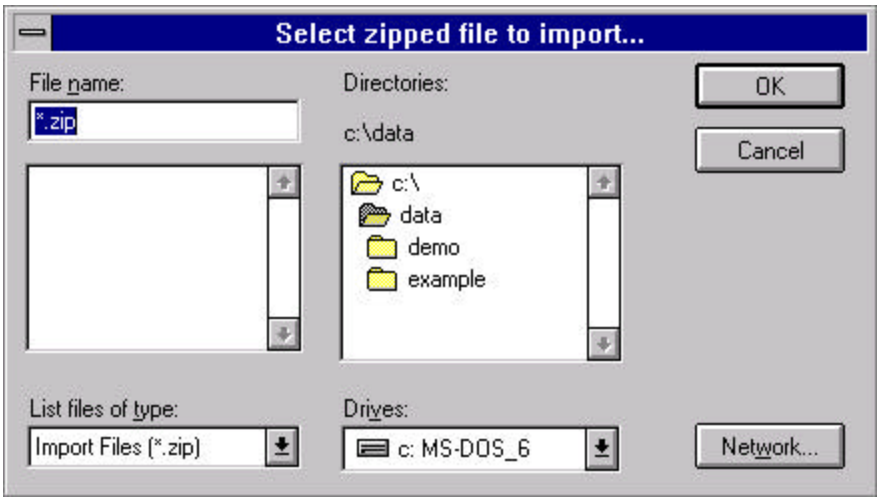
4.1.12 Import File

Import File command (File menu)

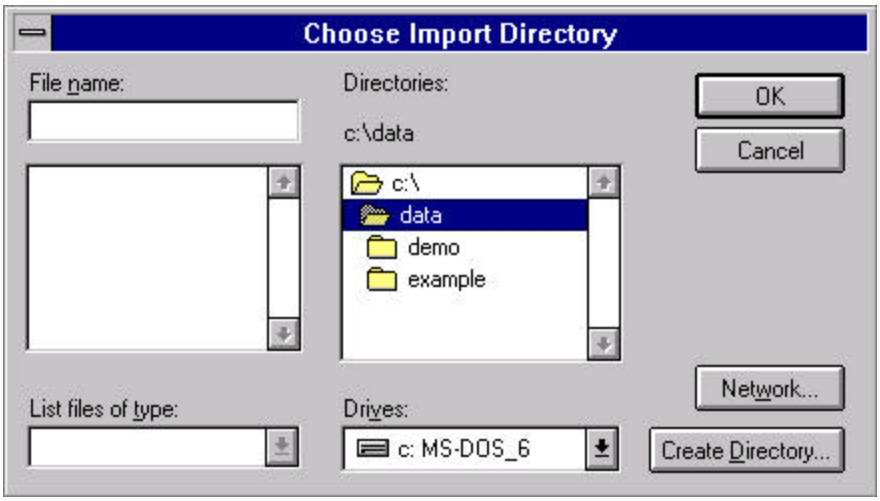
This command is used to import a zipped file containing an image and its associated redline layer files. Below are the required steps to accomplish this procedure:

Required Steps:

Select the "Import File..." option under the "File" Menu. The following dialog box will appear:



Navigate and select the zipped file you want to import. Once you have selected the file the following dialog box will appear:



Navigate to the desired ouput directory and select ok. This directory will be where the zipped file will be unzipped. If you want to create a new ouput directory then simply navigate to where you want the new directory to be placed and select the "Create Directory..." button.

As the import procedure begins, the image file, redline layer file(s) and all link file(s) will be dumped into the selected output directory.

** Important Note **

In order to view the imported image's redline layers, the user must set the redline directory to the directory where the zipped file was imported. For example, if the imported directory was c:\data\import then set the redline directory to c:\data\import. The "Set Directory..." option can be found under the "Layer" menu.

4.1.13 Exit

Exit command (File menu)

Use this command to end an ImageR session. The **Close** command on the application's **File** menu can also be used.

Shortcuts

Mouse: Double-click the application's Control-menu box.

Keys: Escape

4.2 Edit Menu

4.2.1 Copy

Copy command (Edit menu)

This command copies selected data onto the clipboard. It is unavailable if no data is selected. Copying data to the clipboard replaces anything previously stored there.

Shortcuts

Toolbar: 
Keys: CTRL+C

4.3 View Menu

4.3.1 Toolbar

Toolbar command (View menu)

Use this command to display and hide the toolbar. A check mark appears next to the menu option when the toolbar is displayed.

The toolbar is at the top of the application window, below the menu bar. It provides quick access with the mouse to frequently used ImageR commands.

To hide or display the toolbar, choose **Toolbar** from the **View** menu (ALT+V+T).

The following commands can be executed with toolbar buttons:

Select	To
	Open an existing document. ImageR displays the Open dialog box, in which you can locate and open the desired file.

Save the active document or template. ImageR displays the Save As dialog box.

Print the active document.

Copy the selection to the clipboard.

Cascade the current images.

Tile the current images.

Fits the document in the active view.

Displays the previous view of the document in the active view.

Starts Window Area mode where you can use the rubber band cursor to define an area of the image to be fitted in the active view.

Starts View Point mode where you can define a view port and view point to fit in the view port.

Starts Zoom Out mode where you can select a point in a view about which to zoom out.

Starts Zoom In mode where you can select a point in a view about which to zoom in.

Adjusts the image view to center the selected position.

Reverses the foreground and background colors.

Rotates the image 90 degrees.

Rotates the image 180 degrees.

Rotates the image 270 degrees.

Mirrors the image horizontally.

 Mirrors the image vertically.

 Creates a new layer of redlines.

 Allows modification of a selected redline layer.

 Saves a redline layer.

 Displays a selected redline layer.

 Deletes a selected redline layer.

4.3.2 Status Bar

Status Bar command (View menu)

Use this command to display and hide the status bar at the bottom of the ImageR main window. The status bar displays the purpose of a menu item or toolbar button and indicates the keyboard latch state (the example below shows that the Caps Lock key is latched down). A check mark appears next to the menu item when the status bar is displayed.

The area on the left side of the status bar describes the purpose of the command that will be executed by a menu item or toolbar button. To see the command description for a menu item, highlight the item with the arrow keys or hold down the left mouse button and move the pointer to highlight it. Pressing **Enter** (if highlighting with arrow keys) or releasing the mouse button while the menu item is still highlighted will execute the command.

Messages describing toolbar buttons appear on the status bar if you press and hold the left mouse button while the mouse pointer is over a toolbar button. If, after seeing the description of a command, you do not want to execute it, move the pointer off the toolbar button before releasing the mouse button.

The areas on the right side of the status bar indicate which of the following keys are latched down:

Indicator	Description
CAP	The Caps Lock key is latched down.
NUM	The Num Lock key is latched down.

SCRL The Scroll Lock key is latched down.

4.4 Window Menu

4.4.1 New Window

New command (Window menu)

This command opens a new window with the same contents as the active window; multiple windows can be opened to simultaneously show different views of a document. Changing the contents of one window causes changes to all other windows containing the same document. A new window becomes the active window and is displayed on top of all other windows.

4.4.2 Cascade

Cascade command (Window menu)

This command arranges multiple opened windows into an overlapped pattern.

Shortcuts

Toolbar: 
Keys: Shift+F5

4.4.3 Tile

Tile command (Window menu)

This command arranges multiple opened windows in a non-overlapped pattern.

Shortcuts

Toolbar: 
Keys: Shift+F4

4.4.4 Arrange Icons

Arrange Icons Command (Window menu)

This command arranges the icons for minimized windows at the bottom of the main window. If there is an open document window at the bottom of the main window, then some or all of the icons may not be visible because they will be underneath the document window.

4.4.5 Window 1, 2, ...

Window 1, 2, ... command (Window menu)

ImageR displays a list of currently open document windows at the bottom of the Window menu. A check mark appears in front of the document name of the active window. Choose a document from this list to make its window active.

4.5 Commands Menu

The Commands menu is available for Raster and Vector file views. The Commands menu includes commands that let you manipulate the image views displayed in the ImageR main window. Different commands are available depending on the file type of the active view.

Raster Commands available:

Fit
Previous View
Window Area
View Point
Zoom In
Zoom Out
Window Center
Invert
Rotate
Horizontal
Vertical

Vector Commands available

Fit
Previous View
Window Area
View Point
Zoom In

Zoom Out
Window Center

Each of these commands are described in the sections below.

4.5.1 Fit

Fit command (Commands menu)

The Fit command sizes an image so the entire image fits into the selected view. The image is scaled appropriately for the width and height of the view window.

To use the Fit command, select the **Fit** button on the toolbar or the **Fit** option on the **Commands** menu then click the left mouse button in the view window to be fitted. The image will be fitted immediately into the view window. The Fit command remains active until either another command is executed or the right mouse button is clicked.

Shortcuts

Toolbar: 

Keys: CTRL+F

4.5.2 Previous View

Previous View command (Commands menu)

The Previous View command displays the previous view of the active file.

To use the Previous View command press the Previous View button on the ImageR toolbar, or press the Previous View option on the Commands. The previously displayed portion of the active view will be displayed immediately in the view window.

Shortcuts

Toolbar: 
Keys: CTRL+E

4.5.3 Window Area

Window Area command (Commands menu)

The Window Area command allows you to define part of an image to fit into a view by selecting two corner points in the image. A rubber band cursor is drawn to define the rectangle that will be sized to fit into the selected view window. The partial image will be scaled so it is not distorted when fitted into the view window.

To use the Window Area command, select the **Window Area** button on the toolbar or the **Window Area** option on the **Commands** menu. Place the mouse pointer over the point in the image that will the upper left corner of the partial image then click the left mouse button. A rubber band cursor appears and follows the mouse pointer to show the image area being selected. Move the cursor to the desired lower right point and click the left mouse button. The partial image will be scaled appropriately and displayed in the view window.

The Window Area command remains active until another command is activated or the right mouse button is clicked.

Shortcuts

Toolbar: 
Keys: CTRL+W

4.5.4 View Point

View Point command (Commands menu)

The View Point command allows you to define a view box and choose points on an image to be displayed to scale in the view box.

To use the View Point command, select the **View Point** button on the ImageR toolbar, or the **View Point** option on the **Commands** menu. Define a view box in the view window by selecting upper left and lower right points in the view window. A rectangle will be drawn to define the boundaries of the view box. Define a view port in the view window by selecting upper left and lower right points in the view window. An initial rectangle will be drawn to define the boundaries of the view port. Once the view box and view ports have been defined, move the cursor to positions in the view window and press the left mouse button. The area of image around the mouse pointer and within the view port will be scaled and displayed in the view box. Each time the left mouse button is clicked at a different location, the image around the pointer defined by the view port will be scaled and displayed in the view box.

The View Point command remains active until another command is activated or the right mouse button is clicked.

Shortcuts

Toolbar: 
Keys: CTRL+T

4.5.5 Zoom In

Zoom In command (Commands menu)

The Zoom In command enlarges an image around a selected point.

To use the Zoom In command, select the **Zoom In** button on the ImageR toolbar, or press the **Zoom In** option on the Commands menu and click the left mouse button in the view window at the point to which the image is to be zoomed in. The image will be zoomed and redisplayed in the view window. The Zoom In command remains active until another command is activated or the right mouse button is clicked.

Shortcuts

Toolbar: 
Keys: CTRL+M

4.5.6 Zoom Out

Zoom Out command (Commands menu)

The Zoom Out command shrinks an image around a selected point.

To use the Zoom Out command select the **Zoom Out** button on the ImageR toolbar or the **Zoom Out** option on the **Commands** menu, then click the left mouse button in the view window at the point around which the image is to be zoomed out. The image will zoom out and be redisplayed in the view window. The Zoom Out command remains active until another command is activated or the right mouse button is clicked.

Shortcuts

Toolbar: 
Keys: CTRL+U

4.5.7 Window Center

Window Center command (Commands menu)

The Window Center command adjusts the image view to center the selected position. The image must not be fitted into the view window, for this command to be active.

To use the Window Center command press the Window Center button on the ImageR toolbar, or press the Window Center option on the Commands menu and press the left mouse button in the view window at the point to which the image is to be centered in the view window. The image display will be adjusted where the selected point is in the center of the view window. The Window Center command remains active until another command is activated or the right mouse button is pressed.

Shortcuts

Toolbar: 
Keys: CTRL+D

4.5.8 Invert

Invert command (Commands menu)

The Invert command reverses the foreground and background colors in the active view window.

To use the Invert command make the desired view window the active window by selecting it with the mouse, then select the **Invert** option on the **Commands** menu. The image will be redisplayed with foreground and background colors swapped. The Invert command is a single select command and does not remain active.

Shortcuts

Toolbar: 
Keys: ALT+C+N

4.5.9 Rotate

Rotate command (Commands menu)

The Rotate command adjusts the orientation of the active view window clockwise by 90, 180, or 270 degrees.

To use the Rotate command, make the desired view window the active window by selecting it with the mouse, then select the **Rotate** option on the **Commands** menu. A cascading menu will be displayed next to the Commands menu with options for 90, 180, and 270 degree rotations. The image will be rotated and redisplayed. The Rotate command is a single select command and does not remain active.

Shortcuts

Toolbar:  90 degrees
Keys: ALT+C+R+9

Toolbar:  180 degrees
Keys: ALT+C+R+1

Toolbar:  270 degrees
Keys: ALT+C+R+2

4.5.10 Horizontal

Horizontal command (Commands menu)

The Horizontal command horizontally mirrors (flips) the image in the active window. If the image were drawn on a clear sheet of paper, the effect of a horizontal mirroring is to turn the page over so that you are looking through the back of the image.

To use the Horizontal command make the desired view window active by selecting it with the mouse, then press the **Horizontal** option on the **Commands** menu. The image will be mirrored horizontally and redisplayed. The Horizontal command is a single select command and does not remain active.

Shortcuts

Toolbar: 
Keys: ATL+C+H

4.5.11 Vertical

Vertical command (Commands menu)

The Vertical command vertically mirrors(flips) the image in the active window. If the image were drawn on a clear sheet of paper, the effect of a vertical mirroring is to turn the page over and upside down so that you are looking through the backside of the image.

To use the Vertical command make the desired view window the active window by selecting it with the mouse, then select the **Vertical** option on the **Commands** menu. The image will be mirrored vertically and redisplayed. The Vertical command is a single select command and does not remain active.

Shortcuts

Toolbar: 
Keys: ATL+C+V

4.6 Colors Menu

The Colors menu provides options for setting the foreground and background colors of an image view. It is only available on the menu bar for Raster Images.

4.6.1 Foreground

Foreground command (Colors menu)

Use the Foreground option on the Colors menu to change the foreground color of an image.

To set the Foreground color of an image, make the desired view window the active window by selecting it with the mouse, then select the **Foreground** option on the **Colors** menu. The **Color** dialog box will appear. Select the desired foreground color from the list of available colors and click on the **OK** button. The image will be redisplayed with the new foreground color.

Note: Not all colors displayed in the Color dialog box are available in all video display modes. If the current video display mode does not support a color, the nearest available color will be used.

4.6.2 Background

Background command (Colors menu)

Use the Background option on the Colors menu to change the background color of an image.

To set the Background color of an image make the desired view window the active window by selecting it with the mouse, then select the **Background** option on the **Colors** menu. The **Color** dialog box will appear. Select the desired background color from the list of available colors and click on the **OK** button. The image will be redisplayed with the new background color.

Note: Not all colors in the Color dialog are available in all video display modes. If your current video display mode does not support the color selected the nearest available color will be used.

4.7 Settings Menu

The Settings menu provides options for setting various display attributes for a vector file. This menu is only available on the menu bar for Vector images.

4.7.1 View Attributes

View Attributes command (Settings menu)

The View Attributes command is used to display the View Attributes dialog. This dialog is used to toggle on/off several display attributes for a vector drawing. Below is a picture of the View Attributes dialog:

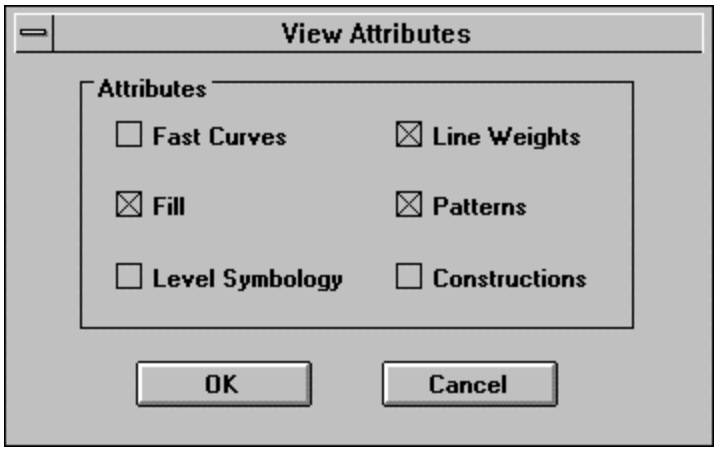


Figure 4-2 View Attributes Dialog

As shown above, the following View Attributes can be toggled:

Fast Curves - If set, curves are drawn as line strings in order to speed up the display time. Bsplines are also drawn faster by leaving out some of the resolution.

Fill - If set, objects with a fill attribute are filled. If not set, filled objects are not filled.

Level Symbology - If set, objects are drawn in the level symbology colors.

Line Weights - If set, line weight attributes are used when drawing objects.

Patterns - If set, objects with pattern fill attributes are drawn using the fill pattern. If not set, pattern attributes are ignored.

Constructions - If set, construction elements are displayed.

4.7.2 Saved Views

Saved Views command (Settings menu)

The Saved Views command is used to display the Saved Views dialog. This dialog is used to turn on a saved view in a vector file. To turn on a saved view, select the saved view from the list in the Saved Views dialog and press the OK button. The image in the active view window will be changed to the selected saved view.

Below is a picture of the Saved Views dialog:

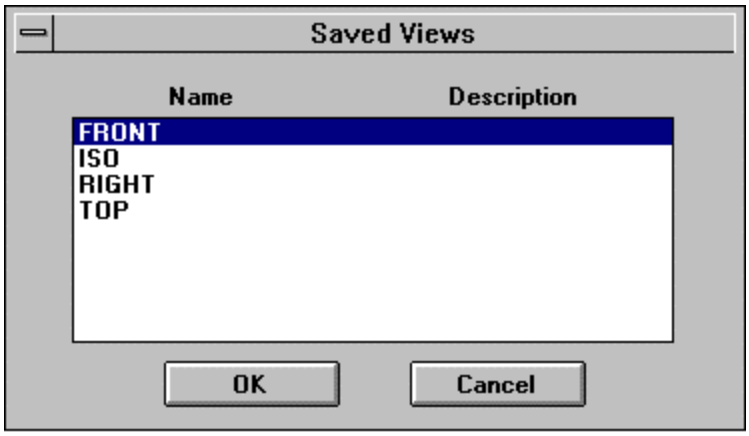


Figure 4-3 Saved Views Dialog

4.7.3 View Levels

View Levels command (Settings menu)

The View Levels command is used to display the View Levels dialog. This dialog is used to toggle on/off levels in a view window for a vector drawing. A toggle box exists for each of the 64 levels in a vector file. By default, all of the levels are turned on (an X in the toggle box indicates the level is on). By turning off levels of a vector drawing, you can turn off the objects in the drawing that are associated with those levels.

To control which levels are displayed in a view window for a drawing, use the cursor and left mouse button to turn on the desired levels and press the OK button. The active view for the drawing will be redrawn to display only those objects associated with the levels that are set in the View Levels dialog.

Below is a picture of the View Levels dialog:

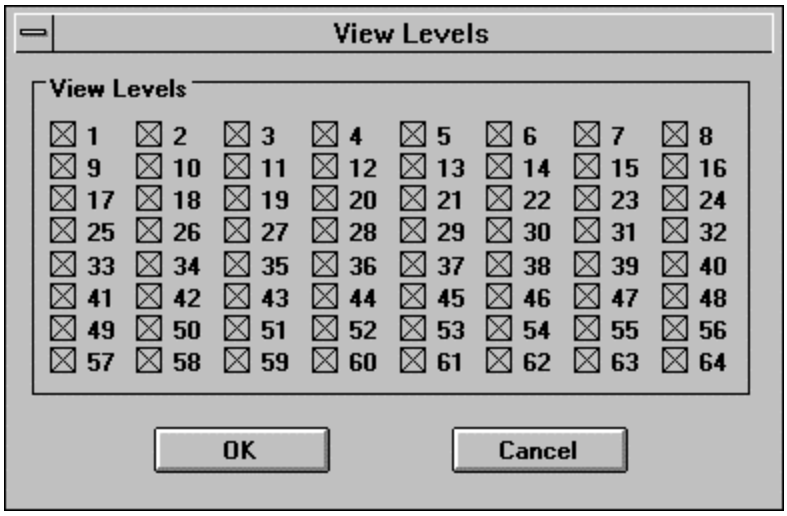


Figure 4-4 View Levels Dialog

4.7.4 Reference Files

Reference Files command (Settings menu)

The Reference Files command is used to display the Reference Files dialog. This dialog is used to display the reference file objects in the view windows of the active drawing. By default, no reference file objects are displayed when a vector drawing is displayed. You must specifically select reference files to be displayed for the active drawing.

To display objects for a reference file, select the desired reference file(s) from the list in the Reference Files dialog and press the OK button. The selected reference file(s) will be opened and the objects displayed. To not display reference file objects, unselect the desired reference files from the list in the Reference Files dialog.

Below is a picture of the Reference Files dialog:

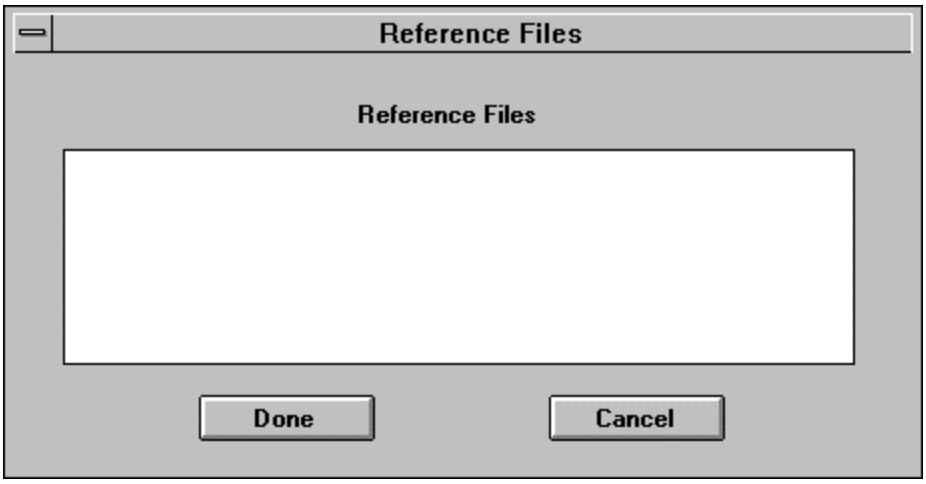


Figure 4-5 Reference Files Dialog

4.8 Layer Menu

The Layer menu provides options for manipulating redline layers in a file. The Layer menu is available on the menu bar for both Raster and Vector images.

4.8.1 Create Layer

Create Layer Command (Layer menu)

The Create Layer command is used to create a redline layer for the drawing. A redline layer must be created before any redlines can be made to a drawing. Once a layer is created, redlines can be added, deleted, and manipulated in a number of different ways. If not already displayed, the Redline Ribbon and Redline Toolbox are displayed when this option is selected. Below is a picture of the Redline Ribbon and the Redline Toolbox.

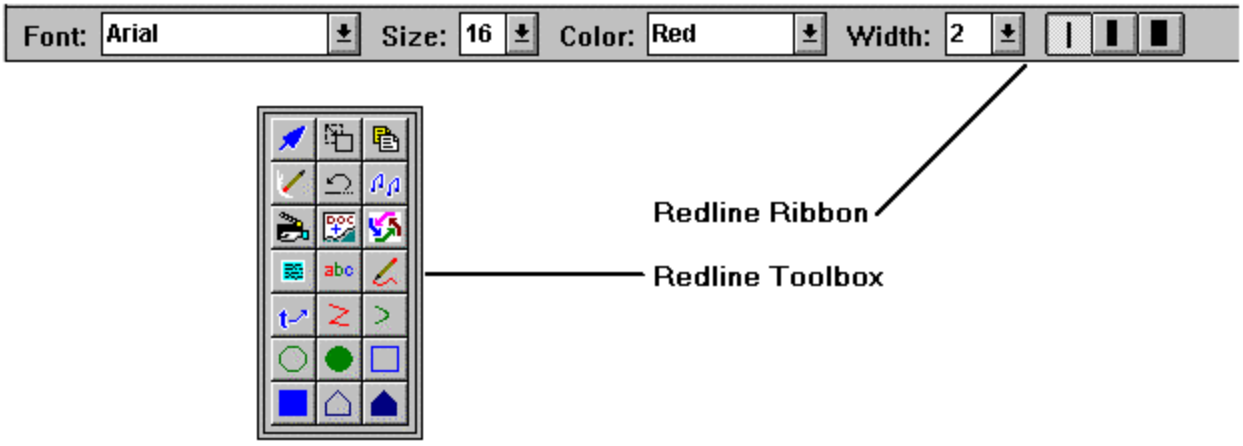


Figure 4-6 Redline Ribbon and Redline Toolbox

To create a redline layer, select the Create option from the Layer menu, or select the Create Layer icon on the toolbar.

Shortcuts

Toolbar: 
Keys: ATL+L+C

4.8.2 Modify Layer

Modify Layer Command (Layer menu)

The Modify Layer command is used to modify a redline layer in the drawing. If the drawing has redline layers already created and saved, the Modify Layers dialog is displayed. (If no redline layers exist for the drawing, a message box is displayed with the message "No redline layers exist for this document.") Below is a picture of the Modify Layers dialog.

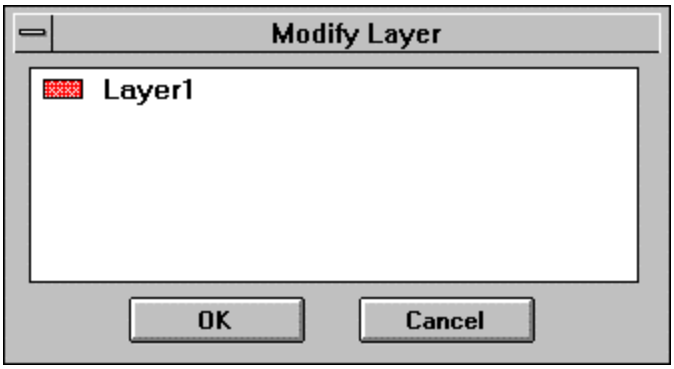


Figure 4-7 Modify Layer Dialog

To select a redline layer for modification, select the Modify option from the Layer menu or select the Modify Layer icon on the toolbar.

Shortcuts

Toolbar: 
Keys: ATL+L+M

If the drawing has redline layers, the Redline Layers dialog is displayed with a list of the drawing's redline layer descriptions. Click on the description of the redline layer to modify and select the OK button. The Redline Layers Dialog disappears and the selected redline layer is displayed. If not already displayed, the Redline Ribbon and Redline Toolbox are displayed when this option is selected. Refer to Figure 4-6 for a picture of the Redline Ribbon and the Redline Toolbox.

4.8.3 Save Layer

Save Layer Command (Layer menu)

The Save Layer command is used to save a redline layer in the drawing. This command is only active if a redline layer has been created or selected for modification. To save a redline layer, select the Save option from the Layer menu or select the Save Layer icon on the toolbar.

Shortcuts

Toolbar: 
Keys: ATL+L+S

Once the command is selected, the Save Redline Layer dialog is displayed. Below is a picture of the Save Redline Layer dialog.

Figure 4-8 Saved Redline Layer Dialog

In the Description field, enter a description for the redline layer being saved. (This description is the one displayed in the Redline Layers dialog used in the other Layer commands.) If this redline layer should be displayed automatically the next time this drawing is opened, select the Auto Load option. Selecting the OK button will save the redline layer. Selecting the Cancel button will cancel out of the Save Redline Layer dialog.

4.8.4 Display Layer

Display Layer Command (Layer menu)

The Display Layer command is used to display a redline layer in the drawing. If the drawing has redline layers already created and saved, the Display Layer dialog is displayed. (If no redline layers exist for the drawing, a message box is displayed with the message "No redline layers exist for this document.") Below is a picture of the Display Layer dialog.

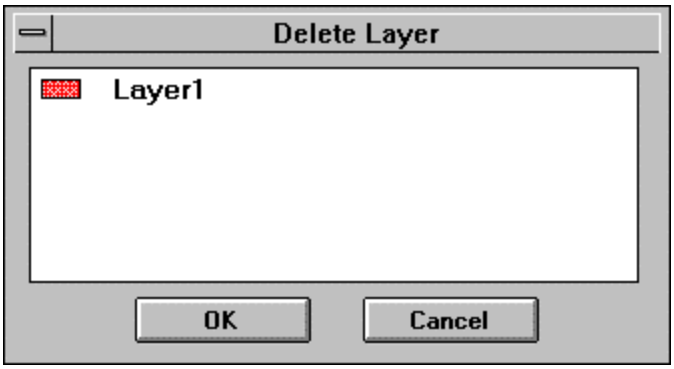


Figure 4-9 Delete Layer Dialog

To select a redline layer for display, select the Display option from the Layer menu or select the Display Layer icon on the toolbar.

Shortcuts

Toolbar: 
Keys: ATL+L+D

If the drawing has redline layers, the Display Layer dialog is displayed with a list of the drawing's redline layer descriptions. Click on the description of the redline layer to display and select the OK button. The Display Layer Dialog disappears and the selected redline layer is displayed. If not already displayed, the Redline Ribbon and Redline Toolbox are displayed when this option is selected. Refer to Figure 4-6 for a picture of the Redline Ribbon and the Redline Toolbox.

4.8.5 Delete Layer

Delete Layer Command (Layer menu)

The Delete Layer command is used to delete a redline layer for the drawing. If the drawing has redline layers already created and saved, the Delete Layer dialog is displayed. (If no redline layers exist for the drawing, a message box is displayed with the message "No redline layers exist for this document.") Below is a picture of the Delete Layer dialog.

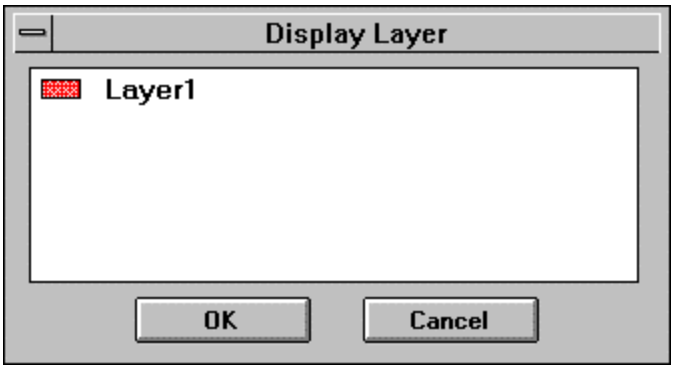


Figure 4-10 Display Layer Dialog

To select a redline layer for deletion, select the Delete option from the Layer menu or select the Delete Layer icon on the toolbar.

Shortcuts

Toolbar: 
Keys: ATL+L+L

If the drawing has redline layers, the Delete Layer dialog is displayed with a list of the drawing's redline layer descriptions. Click on the description of the redline layer to delete and select the OK button. The Delete Layer Dialog disappears and the selected redline layer is displayed. If not already displayed, the Redline Ribbon and Redline Toolbox are displayed when this option is selected. Refer to Figure 4-7 for a picture of the Redline Ribbon and the Redline Toolbox.

4.8.6 Set Directory

Set Directory Command (Layer menu)

The Set Directory command allows the user to change the location of the default redline directory. This is the directory where redline layers will be saved. Below is a picture of the Set Redline Directory dialog.

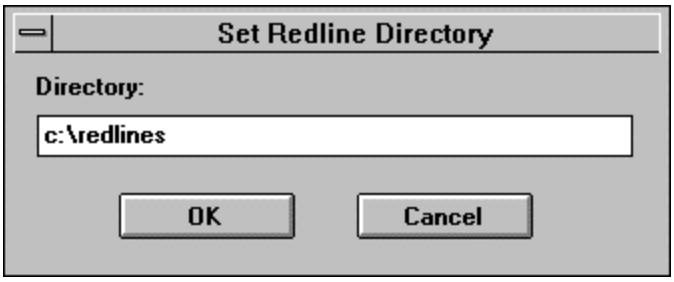


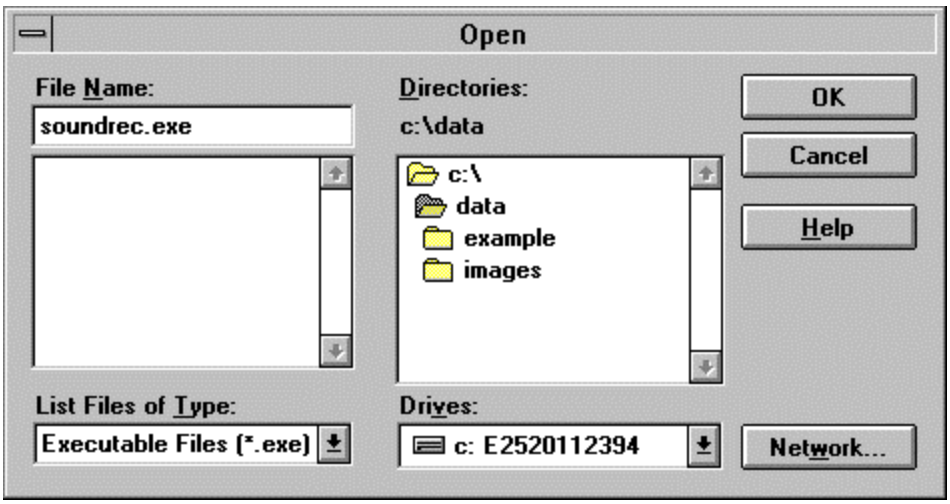
Figure 4-11 Set Redline Directory Dialog

The current default for the redline directory (initially retrieved from the "imager.ini" file) is displayed in the field. Select OK to save the changed directory. Select Cancel to cancel out of the dialog.

4.8.7 Set Audio Directory

Set Audio Command (Layer menu)

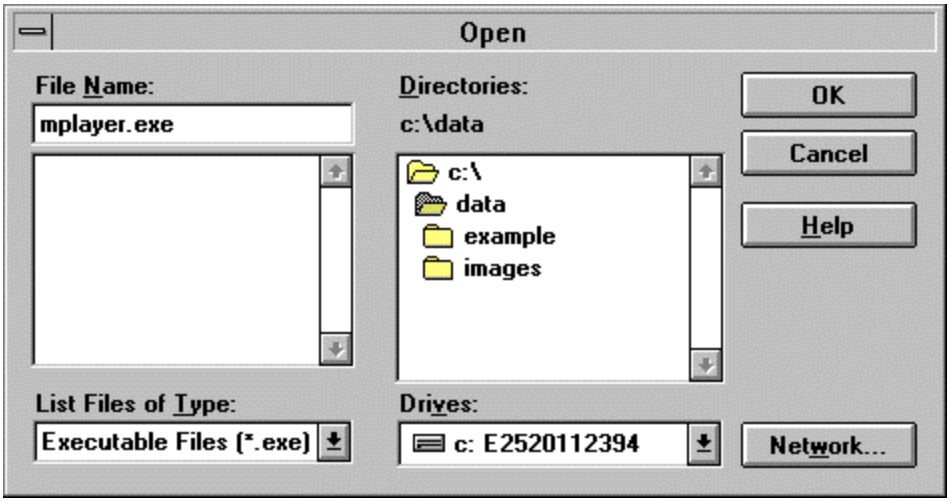
The Set Audio command allows the user to change the audio playback executable if desired.



4.8.8 Set Video Directory

Set Video Command (Layer menu)

The Set Video command allows the user to change the video playback executable if desired.



4.9 Redlines Menu

Redlines are a non-destructive markup facility that can be used to make references to other files or bring attention to specific areas of a drawing. Once redlines are made to a drawing, they can be saved and viewed each time that drawing is displayed. For example, if a user should always view a specific area of a drawing, a redline can be created to draw attention to that area. Or, a redline could be placed in a drawing that will allow the viewer to reference another file.

Within a redline layer, redlines can be different objects: lines, shapes, text, or links. Lines can be of various thicknesses and text can be different fonts. Redlines may also have different colors. However, all redlines on a layer will be the same color. If the color of a redline is changed, then the color of all redlines on that layer will also be changed to the selected color.

The Redlines menu provides options for creating and manipulating redlines in a file. The Redline menu is available on the menu bar for both Raster and Vector images.

4.9.1 Redline Toolbox

Redline Toolbox Command (Redlines menu)

The Redline Toolbox command is used to toggle the display of the Redline Toolbox on and off. When the Redline Toolbox is displayed, there is a check mark displayed beside this command in the pulldown menu. If the Redline Toolbox is not displayed, there is no check mark displayed. Below is a picture of the Redline Toolbox.

Figure 4-12 Redline Toolbox

To toggle the display of the Redline Toolbox, select the Toolbox option from the Redlines menu.

Shortcuts

Keys: ATL+R+X

The Redline Toolbox is automatically displayed when a redline layer is created, selected for modification, or displayed.

4.9.2 Redline Ribbon

Redline Ribbon Command (Redlines menu)

The Redline Ribbon command is used to toggle the display of the Redline Ribbon on and off. When the Redline Ribbon is displayed, there is a check mark displayed beside this command in the pulldown menu. If the Redline Ribbon is not displayed, there is no check mark displayed. Below is a picture of the Redline Ribbon.

Figure 4-13 Redline Ribbon

To toggle the display of the Redline Ribbon, select the Ribbon option from the Redlines menu.

Shortcuts

Keys: ATL+R+R

The Redline Ribbon is automatically displayed when a redline layer is created, selected for modification, or displayed.

4.9.3 Thin Lines

Redline Thin Lines Command (Redlines menu)

The Redline Thin Lines command is used to select the thin line setting for redlines. When Thin Lines are selected, there is a check mark displayed beside this command in the pulldown menu. If Thin Lines are not selected, there is no check mark displayed. This line thickness is used when new redlines are drawn.

Choose Thin Lines by selecting the Thin Lines option from the Redlines menu or select the Thin Lines icon from the Redline Ribbon.

Shortcuts

Toolbar:
Keys: ATL+R+T

4.9.4 Medium Lines

Redline Medium Lines Command (Redlines menu)

The Redline Medium Lines command is used to select the medium line setting for redlines. When Medium Lines are selected, there is a check mark displayed beside this command in the pulldown menu. If Medium Lines are not selected, there is no check mark displayed. This line thickness is used when new redlines are drawn.

Choose Medium Lines by selecting the Medium Lines option from the Redlines menu or select the Medium Lines icon from the Redline Ribbon.

Shortcuts

Toolbar:
Keys: ATL+R+T

4.9.5 Heavy Lines

Redline Heavy Lines Command (Redlines menu)

The Redline Heavy Lines command is used to select the heavy line setting for redlines. When Heavy Lines are selected, there is a check mark displayed beside this command in the pulldown menu. If Heavy Lines are not selected, there is no check mark displayed. This line thickness is used when new redlines are drawn.

Choose Heavy Lines by selecting the Heavy Lines option from the Redlines menu or select the Heavy Lines icon from the Redline Ribbon.

Shortcuts

Toolbar:
Keys: ATL+R+T

4.9.6 Select

Redline Select Command (Redlines menu)

The Redline Select command is used to select redlines before they are moved, deleted, or copied. To select a redline, select the Select option from the Redlines menu or select the Select button from the Redlines Toolbox. A single click on a redline object will select the redline. Another click on the same redline will unselect that redline.

Shortcuts

Toolbox: 

4.9.7 Move

Redline Move Command (Redlines menu)

The Redline Move command is used to move redlines placed in a drawing. Before a redline can be moved, a redline layer must be **created** (Section 4.8.1) or selected for **modification** (Section 4.8.2). This layer must also have a redline already created. To move a redline in a drawing, first **select** (Section 4.9.6) the redline to be moved.

After selecting the redlines, choose the Move option from the Redlines menu or select the Move icon from the Redline Toolbox. (If the Move command is selected before selecting a redline, the message "Select redline element(s) first" is displayed.)

Shortcuts

Toolbox: 
Keys: ATL+R+O

Next, select a reference point to be used during the move command by clicking the left mouse button. The location of the selected redline(s) relative to this reference point will be the new location of the selected redline(s) relative to the next point clicked. For example, if a

circle is to be moved, and the reference point is the center of the circle, the next click would move the center of the circle to the point just selected. If the reference point was to the left of the circle, the next click would move the circle to the right of the point just selected. All selected redlines will be affected by the move command.

The move mode is still active at this point, so the user may continue moving the selected redlines around the drawing. To exit move mode, click the right mouse button.

4.9.8 Copy

Redline Copy Command (Redlines menu)

The Redline Copy command is used to copy redlines placed in a drawing. Before a redline can be copied, a redline layer must be **created** (Section 4.8.1) or selected for **modification** (Section 4.8.2). This layer must also have a redline already created.

To copy a redline in a drawing, first **select** (Section 4.9.6) the redline to be copied. All selected redlines will be affected by the copy command. Then, select the Copy option from the Redlines menu or select the Copy icon from the Redline Toolbox. (If the Copy command is selected before selecting a redline, the message "Select redline element(s) first" is displayed.)

Shortcuts

Toolbox: 
Keys: ATL+R+P

Next, select a reference point to be used during the copy command by clicking the left mouse button. The location of the selected redline(s) relative to this reference point will be the location of the copied redline(s) relative to the next point. For example, if a circle is to be copied, and the reference point is the center of the circle, the next click would place the center of the copied circle to the point just selected. If the reference point was to the left of the circle, the next click would place the copied circle to the right of the point just selected.

The copy mode is still active at this point, so the user may continue copying the selected redlines around the drawing. To exit copy mode, click the right mouse button.

4.9.9 Delete

Redline Delete Command (Redlines menu)

The Redline Delete command is used to delete redlines placed in a drawing. Before a redline can be deleted, a redline layer must be **created** (Section 4.8.1) or selected for **modification** (Section 4.8.2). This layer must also have a redline already created.

To delete a redline in a drawing, first **select** (Section 4.9.6) the redline to be deleted. All selected redlines will be affected by the delete command. Then, select the Delete option from the Redlines menu or select the Delete icon from the Redline Toolbox. (If the Delete command is selected before selecting a redline, the message "Select redline element(s) first" is displayed.)

Shortcuts

Toolbox: 
Keys: ATL+R+D

Next, click in the drawing view. This will delete all selected redlines.

4.9.10 Undo

Redline Undo Command (Redlines menu)

The Redline Undo command is used to undo the previous redline command. Before the undo command can be used, a redline layer must be **created** (Section 4.8.1) or selected for **modification** (Section 4.8.2).

To use the Undo command, select the Undo option from the Redlines menu or select the Undo icon from the Redline Toolbox.

Shortcuts

Toolbox: 
Keys: ATL+R+U

Whichever redline command was just performed, the Undo command will undo it. This includes redline placement such as lines, circles, and rectangles. It also includes redline commands such as move, copy, and delete.

4.9.11 Audio File

Redline Audio File Command (Redlines menu)

The Redline Audio File command is used to place audio file references in a drawing. This redline option displays an "A" surrounded by a box in the drawing. An audio link will allow the playing of an audio file from inside a drawing. Before an Audio File Link can be placed, a redline layer must be **created** (Section 4.8.1) or selected for **modification** (Section 4.8.2).

To place a audio file redline in a drawing, select the Audio File option from the Redlines menu or select the Audio File icon from the Redline Toolbox.

Shortcuts

Toolbox: 
Keys: ATL+R+A

Once audio file is selected, the File Open dialog is displayed. Choose the audio file to be referenced by the redline. Select the OK button to accept the file. Select the Cancel button to cancel out of the File Open dialog.

After selecting the OK button, the audio file symbol (an "A" surrounded by a box) is displayed next to the cursor as the cursor moves across the drawing. Place the audio file symbol in the desired location and click the left mouse button to add the redline to the drawing.

Once the audio file redline is placed, it cannot be edited. It can only be played. To change the file that a audio link plays, the audio link redline must be **deleted** (Section 4.9.8) and then placed again.

To execute the audio link redline, double click with the left mouse button on the audio link symbol. The command to run the selected audio file will be executed and the audio file will be played. To view the command that will be executed when the audio link is double clicked, hold down the Control key while double clicking. This will display the Show Command dialog. To continue playing the audio file, select the OK button. To cancel playing, select the Cancel button. Below is a picture of the Show Command dialog.

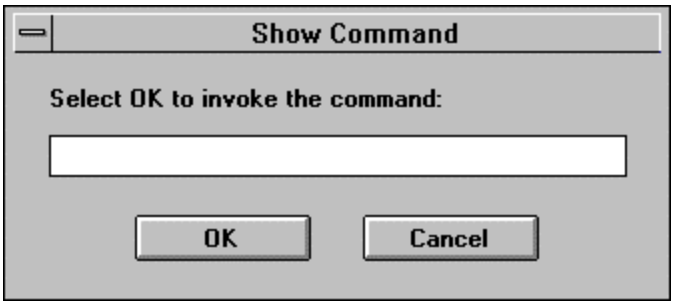


Figure 4-14 Show Command Dialog

4.9.12 Video File

Redline Video File Command (Redlines menu)

The Redline Video File command is used to place video file references in a drawing. This redline option displays an "V" surrounded by a box in the drawing. A video link will allow the display of a video file from inside a drawing. Before a Video File Link can be placed, a redline layer must be **created** (Section 4.8.1) or selected for **modification** (Section 4.8.2).

To place a video file redline in a drawing, select the Video File option from the Redlines menu or select the Video File icon from the Redline Toolbox.

Shortcuts

Toolbox: 
Keys: ATL+R+V

Once video file is selected, the File Open dialog is displayed. Choose the video file to be referenced by the redline from the file selection box. Select the OK button to accept the file. Select the Cancel button to cancel out of the File Open dialog.

After selecting the OK button, the video file symbol (an "V" surrounded by a box) is displayed next to the cursor as the cursor moves across the drawing. Place the video file symbol in the desired location and click the left mouse button to add the redline to the drawing.

Once the video file redline is placed, it cannot be edited. It can only be viewed. To change the file that a video link displays, the video link redline must be **deleted** (Section 4.9.8) and then placed again.

To execute the video link redline, double click with the left mouse button on the video link symbol. The command to run the selected video file will be executed and the video file will be displayed. To view the command that will be executed when the video link is double

clicked, hold down the Control key while double clicking. This will display the Show Command dialog. To continue execution of the video file, select the OK button. To cancel the display, select the Cancel button. Refer to Figure 4-11 for a picture of the Show Command dialog.

4.9.13 File Link

Redline File Link Command (Redlines menu)

The Redline File Link command is used to place file references in a drawing. This redline option displays an "L" surrounded by a box in the drawing. A file link will allow the display of another drawing in ImageR. For example, an accompanying document can be attached to a basic document with a file link. Once the file link is executed, the specified accompanying document will be displayed as another view inside ImageR. Before a File Link can be placed, a redline layer must be **created** (Section 4.8.1) or selected for **modification** (Section 4.8.2).

To place a file link redline in a drawing, select the File Link option from the Redlines menu or select the File Link icon from the Redline Toolbox.

Shortcuts

Toolbox: 
Keys: ATL+R+L

Once file link is selected, the File Open dialog is displayed. Choose the file to be referenced by the redline from the file selection box. Select the OK button to accept the file. Select the Cancel button to cancel out of the File Open dialog.

After selecting the OK button, the file link symbol (an "L" surrounded by a box) is displayed next to the cursor as the cursor moves across the drawing. Place the file link symbol in the desired location and click the left mouse button to add the redline to the drawing.

Once the file link redline is placed, it cannot be edited. It can only be viewed. To change the file that a file link displays, the file link redline must be **deleted** (Section 4.9.8) and then placed again.

To execute the file link redline, double click with the left mouse button on the file link symbol. ImageR will display the file specified by the file link. To view the file that will be displayed when the video link is double clicked, hold down the Control key while double clicking. This will display the Show Command dialog. To continue display of the file, select the OK button.

To cancel the display, select the Cancel button. Refer to Figure 4-11 for a picture of the Show Command dialog.

4.9.14 Command Link

Redline Command Link Command (Redlines menu)

The Redline Command Link command is used to place command references in a drawing. This redline option displays a "C" surrounded by a box in the drawing. A command link will allow the execution of an external command. For example, a Microsoft Word file could be attached to a drawing as a command link. Once the command link is executed, the specified Microsoft Word file would be displayed in Word. Before a Command Link can be placed, a redline layer must be **created** (Section 4.8.1) or selected for **modification** (Section 4.8.2).

To place a command link redline in a drawing, select the Command Link option from the Redlines menu or select the Command Link icon from the Redline Toolbox.

Shortcuts

Toolbox: 
Keys: ATL+R+L

Once Command Link is selected, the Command Link dialog is displayed. Enter the command to be executed when this redline is selected. This can be done by typing the command in the Command field or by selecting the Browse button next to the Command field. Selecting the Browse button will allow the selection of an ".exe" file from the File Open dialog. Next, enter the file that is to be used as input to the command. This also can be done by typing the filename or by selecting the Browse button next to the File field. Select the OK button to accept the command and file. Select the Cancel button to cancel out of the Command Link dialog. Below is a picture of the Command Link dialog.

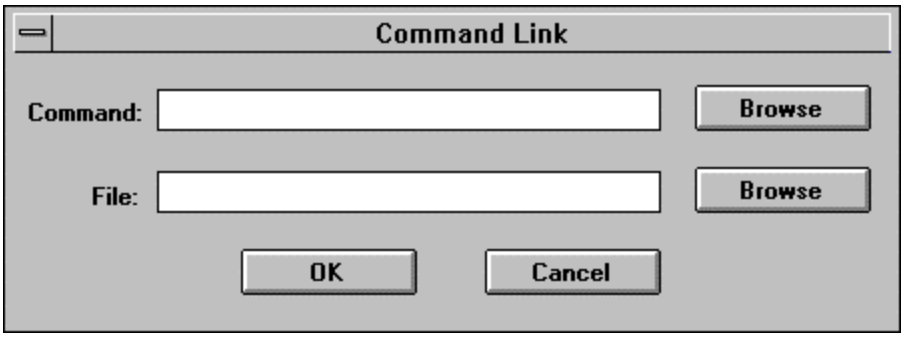


Figure 4-15 Command Link Dialog

After selecting the OK button, the command link symbol (an "C" surrounded by a box) is displayed next to the cursor as the cursor moves across the drawing. Place the command link symbol in the desired location and click the left mouse button to add the redline to the drawing.

Once the command link redline is placed, it cannot be edited. It can only be viewed. To change the file or command that a command link executes, the command link redline must be **deleted** (Section 4.9.8) and then placed again.

To execute the command link redline, double click with the left mouse button on the command link symbol. The command specified in the Command Link dialog will be executed on the file specified in the same dialog. To review the command that will be executed when the command link is double clicked, hold down the Control key while double clicking. This will display the Show Command dialog. To continue execution of the command, select the OK button. To cancel the display, select the Cancel button. Refer to Figure 4-11 for a picture of the Show Command dialog.

4.9.15 Text Note

Redline Text Note Command (Redlines menu)

The Redline Text Note command is used to place text note redlines in a drawing. This redline option displays an "N" surrounded by a box in the drawing. It is intended for large text comments. If small amounts of text are desired to be displayed in the drawing, consider using the **Redline Text** option (Section 4.9.15). Before a Text Note can be placed, a redline layer must be **created** (Section 4.8.1) or selected for **modification** (Section 4.8.2).

To place a text note redline in a drawing, select the Text Note option from the Redlines menu or select the Text Note icon from the Redline Toolbox. Below is a picture of the Text Note icon on the Redline Toolbox.

Shortcuts

Toolbox: 
Keys: ATL+R+N

Once text note is selected, the Text Input dialog is displayed. Inside this dialog, enter the text to be associated with the text note in the drawing. Select the OK button to accept the text. Select the Cancel button to cancel out of the Text Input dialog. Below is a picture of the Text Input dialog.

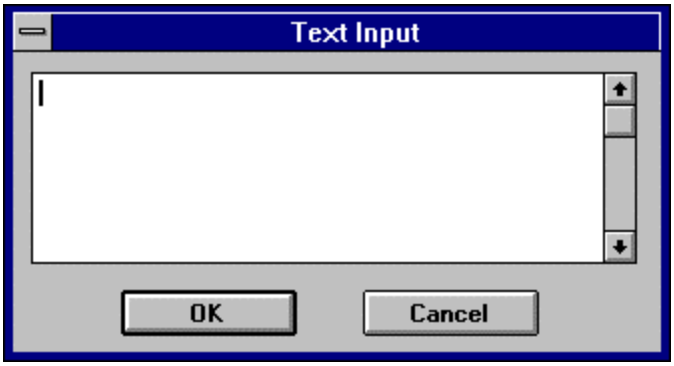


Figure 4-16 Text Input Dialog

After selecting the OK button, the text note symbol (an "N" surrounded by a box) is displayed next to the cursor as the cursor moves across the drawing. Place the text note in the desired location and click the left mouse button to add the redline to the drawing.

The text note redline can be edited by double clicking on the redline. The Text Input dialog is displayed with the redline text note inside. Edit the text in the dialog and select the OK button. There is no change displayed in the drawing, the text note symbol is displayed just as it was before the text was edited.

4.9.16 Text

Redline Text Command (Redlines menu)

The Redline Text command is used to place text redlines in a drawing. This redline option displays the entered text in the drawing. It is intended for short text comments. If large amounts of text are desired, consider using the Redline **Text Note** option (Section 4.9.14). Before Text can be placed, a redline layer must be **created** (Section 4.8.1) or selected for **modification** (Section 4.8.2).

To place a text redline in a drawing, select the Text option from the Redlines menu or select the Text icon from the Redline Toolbox.

Shortcuts

Toolbox: 
Keys: ATL+R+E

Once text is selected, the Text Input dialog is displayed. Inside this dialog, enter the text to be displayed in the drawing. Select the OK button to accept the text. Select the Cancel button to cancel out of the Text Input dialog. Refer to Figure 4-13 for a picture of the Text Input dialog.

After selecting the OK button, the text is displayed next to the cursor as the cursor moves across the drawing. Place the text in the desired location and click the left mouse button to add the redline to the drawing. The text will be displayed in the font and color previously selected in the **Redline Ribbon** (Section 2.3.4).

The text redline can be edited by double clicking on the redline. The Text Input dialog is displayed with the redline text inside. Edit the text in the dialog and select the OK button. The edited text is displayed in the drawing in the original location of the redline.

4.9.17 Draw Freehand

Redline Draw Freehand Command (Redlines menu)

The Redline Draw Freehand command is used to place freehand redlines in a drawing. The freehand redline will allow the placement of anything that can be drawn with the cursor. Before a Freehand Line can be placed, a redline layer must be **created** (Section 4.8.1) or selected for **modification** (Section 4.8.2).

To place a freehand redline in a drawing, select the Draw Freehand option from the Redlines menu or select the Draw Freehand icon from the Redline Toolbox.

Shortcuts

Toolbox: 
Keys: ATL+R+W+H

Once draw freehand is selected, freehand mode is activated. Place the cursor where the freehand is to begin and press and hold the left mouse button. With the cursor, draw the desired freehand redline. As the cursor moves across the drawing, it leaves a dot trail.

Once the freehand is completed, release the left mouse button. At this point, the dot trail is connected into a freehand redline. The line thickness and color used for this redline are the thickness and color previously selected from the **Redline Ribbon** (Section 2.3.4).

Freehand mode is still active and other freehand redlines can be added by following the same procedure. To exit freehand mode, click the right mouse button.

4.9.18 Draw Leader

Redline Draw Leader Command (Redlines menu)

The Redline Draw Leader command is used to place leader redlines in a drawing. The purpose of a leader redline is to draw an arrow to point to a place of interest in a drawing. The user can then place a text, text note, or other redline at the other end of the arrow for emphasis. Before a Leader can be placed, a redline layer must be **created** (Section 4.8.1) or selected for **modification** (Section 4.8.2).

To place a leader redline in a drawing, select the Draw Leader option from the Redlines menu or select the Draw Leader icon from the Redline Toolbox.

Shortcuts

Toolbox: 
Keys: ATL+R+W+L

Once Draw Leader is selected, draw mode is activated. Place the cursor where the tip of the arrow is to point. Click the left mouse button and then move the cursor. As the cursor moves, the arrow is displayed. Once the arrow size has been decided, click the left mouse button again.

At this point, the arrow is placed and the line from the arrow begins. Place the line from the arrow just as a line would be placed through **Draw Line** (Section 4.9.18). Once the line string is complete, click the right mouse button. The line string and the arrow head are all considered one redline. The line thickness and color used for this redline are the thickness and color previously selected from the **Redline Ribbon** (Section 2.3.4).

4.9.19 Draw Line

Redline Draw Line Command (Redlines menu)

The Redline Draw Line command is used to place any length lines or line strings in a drawing. Before a Line can be placed, a redline layer must be **created** (Section 4.8.1) or selected for **modification** (Section 4.8.2).

To place a line redline in a drawing, select the Draw Line option from the Redlines menu or select the Draw Line icon from the Redline Toolbox.

Shortcuts

Toolbox: 
Keys: ATL+R+W+I

Once Draw Line is selected, draw mode is activated. Place the cursor where the line is to start. Click the left mouse button and then move the cursor. As the cursor moves, the line is displayed. Once the line size has been decided, click the left mouse button again. This will place the first line and begin the second line. If a line string is desired, move the mouse to the end point of the next line and click the left mouse button again. Lines will continue to be placed until the right mouse button is clicked. The line thickness and color used for this redline are the thickness and color previously selected from the **Redline Ribbon** (Section 2.3.4).

4.9.20 Draw Arc

Redline Draw Arc Command (Redlines menu)

The Redline Draw Arc command is used to place any size arcs in a drawing. Before an Arc can be placed, a redline layer must be **created** (Section 4.8.1) or selected for **modification** (Section 4.8.2).

To place an arc redline in a drawing, select the Draw Arc option from the Redlines menu or select the Draw Arc icon from the Redline Toolbox.

Shortcuts

Toolbox: 
Keys: ATL+R+W+A

Once Draw Arc is selected, draw mode is activated. Place the cursor where the arc is to start. Click the left mouse button and then move the cursor. As the cursor moves, the arc is displayed. Once the arc size and position has been decided, click the left mouse button again. This will place the arc. The line thickness and color used for this redline are the thickness and color previously selected from the **Redline Ribbon** (Section 2.3.4).

Draw mode is still active at this point, so the user may continue adding arcs to the drawing. To exit draw mode, click the right mouse button.

4.9.21 Draw Circle

Redline Draw Circle Command (Redlines menu)

The Redline Draw Circle command is used to place any size circles in a drawing. Before a Circle can be placed, a redline layer must be **created** (Section 4.8.1) or selected for **modification** (Section 4.8.2).

To place a circle redline in a drawing, select the Draw Circle option from the Redlines menu or select the Draw Circle icon from the Redline Toolbox.

Shortcuts

Toolbox: 
Keys: ATL+R+W+C

Once Draw Circle is selected, draw mode is activated. Place the cursor where the circle is to start. Click the left mouse button and then move the cursor. As the cursor moves, the circle is displayed. Once the circle size has been decided, click the left mouse button again. This will place the circle. The line thickness and color used for this redline are the thickness and color previously selected from the **Redline Ribbon** (Section 2.3.4).

Draw mode is still active at this point, so the user may continue adding circles to the drawing. To exit draw mode, click the right mouse button.

4.9.22 Draw Filled Circle

Redline Draw Filled Circle Command (Redlines menu)

The Redline Draw Filled Circle command is used to place any size filled circles in a drawing. Before a Filled Circle can be placed, a redline layer must be **created** (Section 4.8.1) or selected for **modification** (Section 4.8.2).

To place a filled circle redline in a drawing, select the Draw Filled Circle option from the Redlines menu or select the Draw Filled Circle icon from the Redline Toolbox.

Shortcuts

Toolbox: 
Keys: ATL+R+W+D

Once Draw Filled Circle is selected, draw mode is activated. Place the cursor where the filled circle is to start. Click the left mouse button and then move the cursor. As the cursor moves, the filled circle is displayed. Once the circle size has been decided, click the left mouse button again. This will place the filled circle. The line thickness and color used for this redline are the thickness and color previously selected from the **Redline Ribbon** (Section 2.3.4).

Draw mode is still active at this point, so the user may continue adding filled circles to the drawing. To exit draw mode, click the right mouse button.

4.9.23 Draw Rectangle

Redline Draw Rectangle Command (Redlines menu)

The Redline Draw Rectangle command is used to place any size rectangles in a drawing. Before a Rectangle can be placed, a redline layer must be **created** (Section 4.8.1) or selected for **modification** (Section 4.8.2).

To place a rectangle redline in a drawing, select the Draw Rectangle option from the Redlines menu or select the Draw Rectangle icon from the Redline Toolbox.

Shortcuts

Toolbox: 
Keys: ATL+R+W+R

Once Draw Rectangle is selected, draw mode is activated. Place the cursor where the rectangle is to start. Click the left mouse button and then move the cursor. As the cursor moves, the rectangle is displayed. Once the rectangle size has been decided, click the left mouse button again. This will place the rectangle. The line thickness and color used for this redline are the thickness and color previously selected from the **Redline Ribbon** (Section 2.3.4).

Draw mode is still active at this point, so the user may continue adding rectangles to the drawing. To exit draw mode, click the right mouse button.

4.9.24 Draw Filled Rectangle

Redline Draw Filled Rectangle Command (Redlines menu)

The Redline Draw Filled Rectangle command is used to place filled rectangle redlines in a drawing. Before a Filled Rectangle can be placed, a redline layer must be **created** (Section 4.8.1) or selected for **modification** (Section 4.8.2).

To place a filled rectangle redline in a drawing, select the Draw Filled Rectangle option from the Redlines menu or select the Draw Filled Rectangle icon from the Redline Toolbox.

Shortcuts

Toolbox: 
Keys: ATL+R+W+F

Once Draw Filled Rectangle is selected, draw mode is activated. Place the cursor where the filled rectangle is to start. Click the left mouse button and then move the cursor. As the cursor moves, the filled rectangle is displayed. Once the rectangle size has been decided, click the left mouse button again. This will place the filled rectangle. The line thickness and color used for this redline are the thickness and color previously selected from the **Redline Ribbon** (Section 2.3.4).

Draw mode is still active at this point, so the user may continue adding filled rectangles to the drawing. To exit draw mode, click the right mouse button.

4.9.25 Draw Shape

Redline Draw Shape Command (Redlines menu)

The Redline Draw Shape command is used to place any shapes in a drawing. Before a Shape can be placed, a redline layer must be **created** (Section 4.8.1) or selected for **modification** (Section 4.8.2).

To place a shape redline in a drawing, select the Draw Shape option from the Redlines menu or select the Draw Shape icon from the Redline Toolbox.

Shortcuts

Toolbox: 
Keys: ATL+R+W+S

Once Draw Shape is selected, draw mode is activated. Place the cursor where the shape is to start. Click the left mouse button and then move the cursor. As the cursor moves, the line is displayed. This line is the first side of the shape. Place the other sides of the shape in the same manner. To connect the last side of the shape with the first side, place the cursor close to the shape's starting point and click the left mouse button again. This will connect the last side to the first side and complete the shape. The line thickness and color used for this redline are the thickness and color previously selected from the **Redline Ribbon** (Section 2.3.4).

Draw mode is still active at this point, so the user may continue adding shapes to the drawing. To exit draw mode, click the right mouse button. Any uncompleted shapes will be deleted.

4.9.26 Draw Filled Shape

Redline Draw Filled Shape Command (Redlines menu)

The Redline Draw Filled Shape command is used to place any filled shapes in a drawing. Before a Filled Shape can be placed, a redline layer must be **created** (Section 4.8.1) or selected for **modification** (Section 4.8.2).

To place a filled shape redline in a drawing, select the Draw Filled Shape option from the Redlines menu or select the Draw Filled Shape icon from the Redline Toolbox.

Shortcuts

Toolbox: 
Keys: ATL+R+W+P

Once Draw Filled Shape is selected, draw mode is activated. Place the cursor where the filled shape is to start. Click the left mouse button and then move the cursor. As the cursor moves, the line is displayed. This line is the first side of the shape. Place the other sides of the shape in the same manner. To connect the last side of the shape with the first side, place the cursor close to the shape's starting point and click the left mouse button again. This will connect the last side to the first side and complete the shape. Once the shape is completed, it will be filled. The line thickness and color used for this redline are the thickness and color previously selected from the **Redline Ribbon** (Section 2.3.4).

Draw mode is still active at this point, so the user may continue adding filled shapes to the drawing. To exit draw mode, click the right mouse button. Any uncompleted shapes will be deleted.

4.8 Help Menu

4.8.1 Index

Index command (Help menu)

This command displays the opening screen of Help. From the opening screen, you can select and jump to step-by-step instructions for using ImageR. While in Help, you can click the **Contents** button whenever you want to return to the opening screen.

4.8.2 Using Help

Using Help command (Help menu)

This command displays the How to Use Help opening screen. From this screen, you can jump to step-by-step instructions for using Help as well as instructions for using ImageR. While in Help, you can click the Contents button whenever you want to return to the opening screen.

4.8.3 About

About command (Help menu)

Use this command to display the copyright notice and version number of your copy of ImageR.

Appendix A ImageR Communication Interface

A DDE based communication interface is built into ImageR. This appendix specifies the commands available to ImageR through the DDE interface.

Commands are available to have ImageR open a file, close a file, and terminate. These commands are available through the DDE Execute function. To use these commands specify "ImageR" as the application and "Display" as the topic. The command syntax is:

"[Open(FILENAME)]"	Opens file FILENAME
"[Close(FILENAME)]"	Closes file FILENAME
"[exit]"	Terminates ImageR

In addition to these DDE Execute commands, a command is available for verifying if a file is currently displayed in ImageR through a DDE data request. This command also uses "ImageR" as the application and "Display" as the topic. The command syntax for the verify command is:

"verify FILENAME"

If the file specified by FILENAME is currently displayed, "true" will be returned, otherwise "false" is returned.

Appendix B ImageR OLE Automation Interface

Date: August 11, 2000

Application Programmer Interface

for

ImageR

1. Introduction

The ImageR Application Programmer Interface (API) is a library of 'C' callable functions that can be linked into an application program. The functions in the library interface directly with ImageR through OLE 2.0 Automation. When one of the functions are called in the library, the library function invokes the corresponding method in ImageR to perform any processing and return any data. All of the communication with ImageR in handled within the library. The calling program is not required to know about ImageR.

The OLE Automation methods (with the same name) can also be called directly by application builders such as PowerBuilder, Visual C++, and Visual Basic. See Section 4 for examples.

2. List of Functions

The following functions/methods are available from ImageR:

2.1 ClearHighlight

This function will invoke the ImageR ClearHighlight method to clear any selected elements (redlines, hotspots, tags, or native text) highlighted by the Find Text dialog or the Show functions below. All open files will be cleared.

Input Parameters:

none

Output Parameters:

none

Return Value:

status (integer, 0 - success)

2.2 CloseImagerFile

This function will invoke the ImageR CloseImagerFile method to close a currently opened file and destroy its views.

Input Parameters:

fileName ("" for all open files, wildcards allowed) (char *)

Output Parameters:

none

Return Value:

status (integer, 0 - success)

Examples:

CloseImagerFile ("");

CloseImagerFile ("c:\data*.txt");

Notes of Interest:

fileName can be an empty string ("") for all open files, or an absolute or relative path containing wildcards.

2.3 DisplayText

This function invokes the ImageR DisplayText method which displays text on the drawing at specified x, y coordinates or on the title bar.

Input Parameters:

fileName ("" for all open files, wildcards allowed) (char *)

text (text to display) (char *)

xCoordinate (integer)

yCoordinate (integer)

method ('dynamic' displays on drawing/'title' on title bar) (char *)

Output parameters:

none

Return Value:

status (integer, 0 - success)

Examples:

DisplayText ("c:\data\myfile.cit", "classified", 0, 0, "dynamic");

DisplayText ("c:\data\myfile.txt", "classified", 0, 0, "title");

Notes of Interest:

fileName can be an empty string ("") for all open files, or an absolute or relative path containing wildcards. If a file is not currently open, ImageR will open it and proceed with the search. If ImageR is currently in a minimized state when function is called, then ImageR will be restored and the specified file will become active.

2.4 EnableProcCursor

This function invokes the ImageR EnableProcCursor method which causes ImageR's cursor shape to changed from processing to regular.

Input Parameters:

flag (integer, TRUE-processing, FALSE-regular)

Output parameters:

none

Return Value:

status (integer, 0 - success)

Examples:

```
EnableProcCursor (TRUE);

EnableProcCursor (0);
```

2.5 ExitImager

This function will invoke the ImageR ExitImager method to destroy all ImageR windows and views and will cause ImageR to exit.

Input Parameters:

none

Output Parameters:

none

Return Value:

status (integer, 0 - success)

2.6 FindMatchingHotspots

This function invokes the ImageR FindMatchingHotspots method which searches redline file layers associated with any type of drawing for the hotspots that matches a hotspot passed as an input parameter. If the search method is 'exact' then the function will search for the hotspot and when found will highlight and zoom in on the hotspot. If the search method is 'fuzzy' then the function will search for the hotspot and build a list of matching hotspots to be returned. If the 'fuzzy' search method only returns one match, then the function invokes the 'exact' match method and will highlight and zoom in on the hotspot.

Input Parameters:

fileName ("" for all open files, wildcards allowed) (char *)

tag (hotspot to look for) (char *)

method ('exact' to highlight match/ 'fuzzy' to build a list) (char *)

Return Value:

status (integer, if method is 'exact' then return value should be 0, if method is 'fuzzy' then return value indicates number of matching hotspots found, if return value is negative value, then an error occurred)

Examples:

FindMatchingHotspots ("c:\data\myfile.dgn", "hotspot 1", "exact");

FindMatchingHotspots ("c:\data\myfile.dgn", "hotspot 1", "fuzzy");

Notes of Interest:

fileName can be an empty string ("") for all open files, or an absolute or relative path containing wildcards. If a file is not currently open, ImageR will open it and proceed with the search. If ImageR is currently in a minimized state when function is called, then ImageR will be restored and the specified file will become active.

2.7 FindMatchingTags

This function invokes the ImageR FindMatchingTags method which searches a MicroStation drawing and any associated redline file layers for the tag that matches a tag passed as an input parameter. If the search method is 'exact' then the function will search for the tag and

when found will highlight and zoom in on the tag. If the search method is 'fuzzy' then the function will search for the tag and build a list of matching tags to be returned. If the 'fuzzy' search method only returns one match, then the function invokes the 'exact' match method and will highlight and zoom in on the tag.

Input Parameters:

fileName ("" for all open files, wildcards allowed) (char *)

tag (tag to look for) (char *)

method ('exact' to highlight match/'fuzzy' to build a list) (char *)

Return Value:

status (integer, if method is 'exact' then return value should be 0, if method is 'fuzzy' then return value indicates number of matching tags found, if return value is negative value, then an error occurred)

Examples:

FindMatchingTags ("c:\data\myfile.dgn", "p-102", "exact");

FindMatchingTags ("c:\data\myfile.dgn", "p-102", "fuzzy");

Notes of Interest:

fileName can be an empty string ("") for all open files, or an absolute or relative path containing wildcards. If a file is not currently open, ImageR will open it and proceed with the search. If ImageR is currently in a minimized state when function is called, then ImageR will be restored and the specified file will become active.

2.8 GetAllTags

This function invokes the ImageR GetAllTags method which searches a MicroStation drawing for all tags and returns the list of tags.

Input Parameters:

fileName ("" for all open files, wildcards allowed) (char *)

Output parameters:

tag list (char *)

Return Value:

status (integer, 0 - success)

2.9 GetCloseFile

This function invokes the ImageR GetCloseFile method which returns the filespec of the last file closed. GetCloseFile works in conjunction with RegisterCloseFile, which passes ImageR the window handle of the application. Once RegisterCloseFile is called, ImageR will post a message to the calling application's window handle whenever a file is closed. GetCloseFile can then be called to get the filespec of the closed file.

Input Parameters:

none

Output parameters:

fileName (char *)

Return Value:

status (integer, 0 - success, else no file closed)

2.10 GetMatchingHotspots

This function invokes the ImageR GetMatchingHotspots method which searches any type of drawing for all Hotspots that match a Hotspot in a list of Hotspots passed as an input parameter. Depending on the method(tag/list) input parameter, the function will highlight the matching Hotspots or build a list of matching Hotspots to be returned.

Input Parameters:

fileName ("" for all open files, wildcards allowed) (char *)

tagList (list of hotspots to look for) (char *)

rtnTagList (returned list of matching hotspots) (char *)

method ('tag' to highlight matches/'list' to build rtnTagList) (char *)

Return Value:

status (integer, if method is 'tag' then return value should be 0, if method is 'list' then return value indicates number of matching hotspots found, if return value is negative value, then an error occurred)

Examples:

char buffer[1000];

GetMatchingHotspots ("myfile.dgn", "hotspot 1,hotspot 2", buffer, "tag");

GetMatchingHotspots ("", "hotspot 1,hotspot 2", buffer, "list");

Notes of Interest:

fileName can be an empty string ("") for all open files, or an absolute or relative path containing wildcards. If a file is not currently open, ImageR will open it and proceed with the search. If ImageR is currently in a minimized state when function is called, then ImageR will be restored and the specified file will become active.

2.11 GetMatchingTags

This function invokes the ImageR GetMatchingTags method which searches a MicroStation drawing for all tags that match a tag in a list of tags passed as an input parameter. The function also searches all redline files that are associated with the MicroStation drawing for the list of tags. Depending on the method (tag/list) input parameter, the function will highlight the matching tags or build a list of matching tags to be returned.

Input Parameters:

fileName ("" for all open files, wildcards allowed) (char *)

tagList (list of tags to look for) (char *)

rtnTagList (returned list of matching tags) (char *)

method ('tag' to highlight matches/'list' to build rtnTagList) (char *)

Return Value:

status (integer, if method is 'tag' then return value should be 1, if method is 'list' then return value indicates number of matching tags found, if return value is negative value, then an error occurred)

Examples:

```
char buffer[1000];

GetMatchingTags ("c:\data\myfile.dgn", "p-102,p-89", buffer, "tag");

GetMatchingTags ("c:\data\myfile.dgn", "p-102,p-89", buffer, "list");
```

Notes of Interest:

fileName can be an empty string ("") for all open files, or an absolute or relative path containing wildcards. If a file is not currently open, ImageR will open it and proceed with the search. If ImageR is currently in a minimized state when function is called, then ImageR will be restored and the specified file will become active.

2.12 GetSelectedHotspots

This function invokes the ImageR GetSelectedHotspots method which searches the redline layers of the specified document(s) for all hotspots that have been highlighted via SelectTags, ShowHotspots, or the Find Text dialog.

Input Parameters:

fileName ("" for all open files, wildcards allowed) (char *)

rtnTagList (returned list of matching hotspots) (char *)

Return Value:

status (integer, number of hotspots found)

Examples:

```
char buffer[5000];

GetSelectedHotspots ("", buffer);

GetSelectedHotspots ("c:\data\*.dgn", buffer);
```

Notes of Interest:

fileName can be an empty string ("") for all open files, or an absolute or relative path containing wildcards. If a file is not currently open, ImageR will open it and proceed with the search. If ImageR is currently in a minimized state when function is called, then ImageR will be restored and specified file in fileName will become active.

2.13 GetSelectedTags

This function invokes the ImageR GetSelectedTags method which searches the specified MicroStation document(s) for all tags that have been highlighted via SelectTags, ShowTags, or the Find Text dialog.

Input Parameters:

fileName ("" for all open files, wildcards allowed) (char *)

rtnTagList (returned list of matching tags) (char *)

Return Value:

status (integer, number of tags found)

Examples:

```
char buffer[5000];

GetSelectedTags ("", buffer);

GetSelectedTags ("c:\data\*.dgn", buffer);
```

Notes of Interest:

fileName can be an empty string ("") for all open files, or an absolute or relative path containing wildcards. If a file is not currently open, ImageR will open it and proceed with the search. If ImageR is currently in a minimized state when function is called, then ImageR will be restored and the specified file will become active.

2.14 OpenImagerFile

This function will invoke the ImageR OpenImagerFile method to open the specified file of a supported file type and display it in a view.

Input Parameters:

fileName (wildcards allowed) (char *)

Output parameters:

none

Return Value:

status (integer, 0 - success)

Examples:

OpenImagerFile ("my_file.rle");

OpenImagerFile ("c:\data*.dgn");

Notes of Interest:

fileName can be an absolute or relative path containing wildcards. If ImageR is currently in a minimized state when function is called, then ImageR will be restored and the specified file will become active.

2.15 RegisterCloseFile

This function will invoke the ImageR RegisterCloseFile method to pass the application's window handle to ImageR, so that the application can be notified whenever ImageR closes a file.

Input Parameters:

windowHandle (short)

Output parameters:

none

Return Value:

status (integer, 0 - success)

Examples:

PowerBuilder - RegisterCloseFile (Handle (Parent));

Visual C++ - RegisterCloseFile ((short) GetSafeHwnd());

Visual Basic - TBD

Notes of Interest:

ImageR will post a message to the application every time a file is closed. The application is responsible for trapping the message and responding accordingly. See Section 3 for example source code.

2.16 SelectTags

This function invokes the ImageR SelectTags method which prompts the user to double-click single tags and hotspots or place a fence. The elements will be redrawn in the color specified. To un-select tags and hotspots, depress the SHIFT key while selecting them via double-click or fence. All visible views for the active drawing will be redrawn to show the selected elements. A right mouse button or selection of another command (Window Area, Draw Redline, etc.) will terminate the SelectTags command.

Input Parameters:

fence (0 - don't allow fence, 1 - allow it) (integer)

multiple (0 - don't allow multiple selection, 1 - allow it) (integer)

tagColor (see Section 3.3) (integer)

Output parameters:

none

Return Value:

status (integer, 0 - success)

Examples:

```
SelectTags (1,1, 12);

SelectTags (0, 0, 15);
```

Notes of Interest:

The fence parameter determines whether to allow fence selection of elements. The multiple parameter determines whether multiple tags can be selected (if 0, each double-click that finds a tag/hotspot will clear all previously selected tags/hotspots). If ImageR is currently in a minimized state when function is called, then ImageR will be restored and the specified file will become active.

2.17 SetImagerFocus

This function invokes the ImageR SetImagerFocus method which causes ImageR to get focus and pop to the top of the window display order.

Input Parameters:

none

Output parameters:

none

Return Value:

status (integer, 0 - success)

2.18 ShowHotspots

This function invokes the ImageR ShowHotspots method which highlights hotspots in the specified files. The hotspots will be redrawn in the color specified. All visible views for the specified drawings will be redrawn. No action is required to end the ShowHotspots function.

Input Parameters:

fileName ("" for all open files, wildcards allowed) (char *)

tagList (see Section 3.4) (char *)

tagColor (see Section 3.3) (integer)

Output parameters:

none

Return Value:

status (integer, the number of tags highlighted)

Examples:

ShowHotspots("", "hot1,hot2", 8);

ShowHotspots("c:\data*.txt", "", 9);

Notes of Interest:

fileName can be an empty string ("") for all open files, or an absolute or relative path containing wildcards. If a file is not currently open, ImageR will open it and proceed with the search. If ImageR is currently in a minimized state when function is called, then ImageR will be restored and the specified file will become active.

2.19 ShowImager

This function invokes the ImageR ShowImager method which causes ImageR's display mode to be changed.

Input Parameters:

displayMode (short)

The displayMode parameter can be one of the following values:

Value	*Description*
0	Hides ImageR and passes activation to another window.
1	Activates and displays ImageR. If ImageR is minimized or maximized, Windows restores it to its original size and position.
2	Activates ImageR and displays it as an icon.
3	Activates ImageR and displays it as a maximized window.
4	Displays ImageR in its most recent size and position. The window that is currently active remains active.
5	Activates ImageR and displays it in its current size and position.
6	Minimizes ImageR and activates the top-level window in the system's list.
7	Displays ImageR as an icon. The window that is currently active remains active.

Output parameters:

none

Return Value:

status (integer, 0 - success)

2.20 ShowNoHotspots

This function invokes the ImageR ShowNoHotspots method which un-highlights hotspots in the specified files. All visible views for the specified drawings will be redrawn. No action is required to end the ShowNoHotspots function.

Input Parameters:

fileName ("" for all open files, wildcards allowed) (char *)

Output parameters:

none

Return Value:

status (integer, 0 - success)

Examples:

ShowNoHotspots("");

ShowNoHotspots("c:\data*.txt");

Notes of Interest:

fileName can be an empty string ("") for all open files, or an absolute or relative path containing wildcards.

2.21 ShowNoTags

This function invokes the ImageR ShowNoTags method which un-highlights tagged elements in the specified files. All visible views for the specified drawings will be redrawn. No action is required to end the ShowNoTags function.

Input Parameters:

fileName ("" for all open files, wildcards allowed) (char *)

Output parameters:

none

Return Value:

status (integer, 0 - success)

Examples:

ShowNoTags ("");

ShowNoTags ("c:\data*.txt");

Notes of Interest:

fileName can be an empty string ("") for all open files, or an absolute or relative path containing wildcards.

2.22 ShowTags

This function invokes the ImageR ShowTags method which highlights tagged elements in the specified files. The elements will be redrawn in the color specified. All visible views for the specified drawings will be redrawn. No action is required to end the ShowTags function.

Input Parameters:

fileName ("" for all open files, wildcards allowed) (char *)

tagList (see Section 3.4) (char *)

tagColor (see Section 3.3) (integer)

Output parameters:

none

Return Value:

status (integer, the number of tags highlighted)

Examples:

ShowTags ("", "tag1,tag2,tag3", 8);

ShowTags ("c:\data*.dgn", "", 9);

Notes of Interest:

fileName can be an empty string ("") for all open files, or an absolute or relative path containing wildcards. If a file is not currently open, ImageR will open it and proceed with the search. If ImageR is currently in a minimized state when function is called, then ImageR will be restored and the specified file will become active.

2.23 VerifyImagerFile

This function will invoke the ImageR Verify method to verify that a file is currently displayed in ImageR.

Input Parameters:

fileName	(char *)

Output Parameters:

none

Return Value:

status	(integer, 0 - is displayed, else is not displayed)

3. Parameter conventions

This section describes common ImageR function parameters.

3.1 fileName

The fileName parameter can be an empty string ("") for all open files, or an absolute or relative path containing wildcards. In most cases, if a file is not currently open ImageR will open it.

3.2 tagColor

The tagColor parameter can be one of the following values:

Value	*Color*
0	Black
1	Dark Blue
2	Dark Green
3	Dark Cyan
4	Dark Red
5	Dark Magenta
6	Brown
7	Gray

8	Dark Gray
9	Blue
10	Green
11	Cyan
12	Red
13	Magenta
14	Yellow
15	White

3.3 tagList

The tagList parameter can be an empty string ("") for all tags/hotspots, or a single tag/hotspot name, or a list of tags/hotspots delimited by commas.

4. Example Source Code

4.1 OLE Automation from PowerBuilder

This code will start ImageR and open the specified file:

```
OLEObject imagerobj
imagerobj = create OLEObject
imagerobj.ConnectToNewObject("ImageR.Application")
imagerobj.ShowImager (1)
imagerobj.OpenImagerFile("c:\data\maverick.cit")
```

This code will close the specified file:

```
OLEObject imagerobj
imagerobj = create OLEObject
imagerobj.ConnectToNewObject("ImageR.Application")
imagerobj.CloseImagerFile("c:\data\ddata\2d2.dgn")
```

4.2 OLE Automation from Visual C++

TBD

4.3 OLE Automation from Visual Basic

This code will start ImageR and open the specified file:

```
Dim ImageRObject As Object
Set ImageRObject = CreateObject("ImageR.Application")
ImageRObject.ShowImager 1
ImageRObject.OpenImagerFile "c:\data\maverick.cit"
```

This code will close the specified file:

```
Dim ImageRObject As Object
Set ImageRObject = CreateObject("ImageR.Application")
ImageRObject.CloseImagerFile "c:\data\maverick.cit"
```

4.4 Trapping Messages from ImageR

The ImageR function RegisterCloseFile passes the calling app's window handle to ImageR, and requires the calling app to register and trap messages posted by ImageR. This allows ImageR to communicate with the calling app when a files is closed.

4.4.1 PowerBuilder Example

Declare the following Global Variables:

```
OLEObject imagerobj
unsignedinteger CloseFileMsg
```

and the following Global External Function:

```
Function int RegisterWindowMessage (string msg) Library "user.dll"
```

Add this code to the "open" event on your PowerBuilder window to enable detection of ImageR File Close:

```
integer result
imagerobj = create OLEObject
// Connect to ImageR
result = imagerobj.ConnectToNewObject("ImageR.Application")
if result = 0 then
  // Setup for Close File messages
  imagerobj.RegisterCloseFile(Handle (Parent))
  if CloseFileMsg = 0 then
    CloseFileMsg = RegisterWindowMessage ("ImageRCloseFile")
  end if
```

```
end if
```

Add this code to the "other" event on your PowerBuilder window to trap the CloseFileMsg sent by ImageR:

```
if CloseFileMsg <> 0 and Message.Number = CloseFileMsg then
   imagerobj.GetCloseFile (fileName)
end if
```

4.4.2 Visual C++ Example

```
static unsigned int SelectMsg;
   CloseFileMsg = RegisterWindowMessage("ImageRCloseFile");
```

All incoming messages should then be checked for these values to determine if the message was posted by ImageR. A good place to do this is in the app's MainWndProc:

```
static unsigned int CloseFilexMsg;
long MainWndProc (HWND hWnd, UINT msg, UINT wParam, LONG lParam)
{
   char fileName[256];
   if (message == CloseFileMsg) {
      GetCloseFile (fileName);
```

```
    }
}
```